Gc
942.7201
H62t
v.18
new ser.
1407094

GENEALOGY COLLECTION

ALLEN COUNTY PUBLIC LIBRARY
3 1833 00727 2757

Digitized by the Internet Archive
in 2014

https://archive.org/details/transactionsofhi1818hist

TRANSACTIONS

OF THE

HISTORIC SOCIETY

OF

LANCASHIRE AND CHESHIRE.

NEW SERIES—VOLUME VI.

V.18

SESSION 1865-66.

LIVERPOOL:

ADAM HOLDEN, 48, CHURCH STREET.

1866.

LIVERPOOL:
T. BRAKELL, PRINTER, COOK STREET.

1407094

This Volume has been edited by the Assistant Secretary, under the direction of the Council. The Writers of Papers are solely responsible for the facts and opinions contained in their respective communications.

EXPLANATORY NOTE.

Owing to causes beyond the control of the Council the following Papers, read during Session xviii, cannot be published in the present Volume; but they will appear among the Transactions of the next Session, viz.:—

1. *On the Skull of a Whale and other Bones found at Leasowe* . . . . . by T. J. Moore, Esq.
2. *On an Extensive Collection of Birds made during the Dutch Ladies' Expedition into Central Africa, and recently presented by John A. Tinne Esq. to the Free Public Museum* . by ditto.

The cost of the five illustrations to the Rev. Dr. Hume's Paper, except for printing from the stone, was defrayed by the Author; Mr. F. J. Jeffery presented to the Society the two plates illustrating his Paper; and Mr. Ecroyd Smith supplied the blocks for the illustration facing p. 204. The entire expense of all the others in this Volume has been borne by the Society.

COUNCIL AND OFFICERS FOR 1865-6.

President.

Right Hon. W. E. Gladstone, M.P., Chancellor of the Exchequer.

Vice-Presidents.

Ex Officiis.	Elected.
The Mayor of Liverpool.	Rev. A. Hume, D.C.L., &c.
The High Sheriff of Lancashire.	J. A. Tinne Esq., F.R.G.S.
The High Sheriff of Cheshire.	Hon. A. Egerton, M.P.

Sectional Members of Council.

ARCHÆOLOGY.	LITERATURE.	SCIENCE.
T. Dawson Esq.	T. Haughton Esq.	E. B. Bright, F.R.A.S.
J. H. Gibson Esq	J. R. Hughes Esq.	J. Hartnup, F.R.A.S.
J. Mayer, F.S.A.	J. G. Jacob Esq.	J. F. Marsh Esq.
P. R. M'Quie Esq.	F. J. Jeffery Esq.	W. W. Rundell Esq.
J. Nottingham, M.D.	W. Mathison Esq.	T. Sansom, F.B.S.E.
H. E. Smith Esq.	Rev. R. R. Moore, M.A.	J. T. Towson, F.R.G.S.

Librarian.

D. Buxton, F.R.S.L., Oxford Street, Liverpool.

Curator.

A. Craig Gibson, F.S.A., Stonesfield, Bebington, Birkenhead.

Treasurer.

W. Burke Esq., 17, Bagot Street, Smithdown Road, Liverpool.

Hon. Secretary.

Nicholas Waterhouse Esq., Rake Lane, Liverpool.

Assistant Secretary.

J. H. Genn Esq., 37, Elizabeth Street, Liverpool.

CONTENTS.

[Papers marked thus * are Illustrated.]

PAGE.

* Changes in the Sea-Coast of Lancashire and Cheshire. By the Rev. A. Hume, D.C.L., LL.D., Vice-President 1

Further Observations on the Alleged Submarine Forests on the Shores of Liverpool Bay and the River Mersey. *In reply to Dr. Hume's communication of 10th July*, 1865. By Joseph Boult Esq., F.R.I.B.A. 89

On the Microscopic Fungi of the District around Liverpool. By R. G. McLeod Esq. 127

* Some interesting Features of a neglected Roman Station, Brough-under-Stainmoor. By Mr. Henry Ecroyd Smith ... 137

The Lakeland of Lancashire, No. II.—Hawkshead Parish. By A. Craig Gibson Esq., F.S.A., Hon. Curator 153

* Numismatic History of England from 1066 to the present time. Part II. By F. J. Jeffery Esq., F.G.H.S. 175

* Notabilia of the Archæology and Natural History of the Mersey District during Three Years, 1863-4-5. Compiled by Mr. Henry Ecroyd Smith 195

* Notice of a Recent Disruption of Soil at Rimrose Brook, Bootle. By Mr. Henry Ecroyd Smith 267

Original Letter, referring to the Pretender's march into England in 1745. Contributed by General the Hon. Sir E. Cust..... 271

* Ancient British Remains at Over Darwen. By Charles Hardwick Esq. 273

Discovery of a Roman Hoard in East Lancashire. By Charles Hardwick Esq. 279

List of Members vii

Proceedings, Eighteenth Session 283

Report presented at Annual Meeting..... *ib.*

Treasurer's Balance Sheet 285

Excursion 299

LIST OF ILLUSTRATIONS.

Plate.		Page.
I.	Fortifications of Liverpool in 1644 ..... to face	1
II.	Early Maps of Liverpool and Neighbourhood..... „	30
III.	Fac simile from Leland ..... „	70
IV.	Site of the Chat Moss Flood ..... „	71
V.	Fac simile of part of Formby Roll ..... „	78
VI.	Roman Objects of Bronze found at Brough..... „	147
VII.	Roman Seals of Pewter found at Brough..... „	150
VIII.	English Coins, plate 1..... „	177
IX.	English Coins, plate 2..... „	188
X.	Leaden Salt-pans of the Roman period ..... „	199
XI.	Vertical Section of the Seabeach of Cheshire..... „	204
XII.	Objects found on the Cheshire shore..... „	207
XIII.	Fragment of Equestrian Crock of 13th Century ... „	219
XIV.	—Disruption of Strata at Rimrose Brook ..... „	267
XV.	Ancient British Remains found at Over Darwen &c. „	273

LIST OF MEMBERS.

SESSION XVIII—1865-66.

The first List was dated 23rd November, 1848; all whose names appeared in it are therefore Original Members. Those who have been enrolled as Mayors or Sheriffs have their year of office attached.

The letter P denotes that the Members, in connexion with whose names it occurs, have read papers before the Society.

Those whose names are printed in SMALL CAPITALS are Members of the Council; and in *Italics* are Life Members.

Those marked thus * are Resident. The post town Liverpool is usually omitted.

A

	23rd Nov., 1848.	*Ainslie, Montague*, Grizedale hall, Hawkshead, Windermere.
	1st Dec., 1859.	Ainslie, P. B., F.S.A. Scot., Guildford.
	4th Dec., 1862.	*Anderson, John, 42, Bold street.
	17th Dec., 1857.	*Anderson, Thomas Darnley, 5, India buildings, Water street, and West Dingle.
	3rd May, 1849.	*Anderson, Thomas Francis, Holly lodge, Fairfield, and 3, Cable street.
	4th Dec., 1856.	Ansdell, John, St. Helens.
	23rd Nov., 1848.	Ansdell, Richard, A.R.A., Lytham house, St. Alban's road, Kensington, London, W.
	15th Sept., 1854.	Arrowsmith, P. R., The Ferns, Bolton.
	2nd Dec., 1858.	Artingstall, George, Warrington.
P.	4th Dec., 1862.	Ashfield, Charles Joseph, 9, Regent street, Preston.
P.	11th May, 1854.	Aspland, Rev. R. Brook, M.A., Frampton villas, South Hackney, London.
H. Sh.	Cheshire, 1857.	*Atkinson, William*, Ashton heyes, Chester.
	23rd Nov., 1848.	*Avison, Thomas, F.S.A., 18, Cook street, and Fulwood park, Aigburth.

B

P.	3rd Jan., 1861.	*Baar, Rev. Hermann, Ph.Dr., 4, Chatham place.
	2nd Nov., 1865.	*Bailey, F. J., 51, Grove street.
	8th June, 1854.	*Banning, John Johnson, 20, Castle street.
	3rd Dec., 1863.	*Barron, Charles, 54, Tower buildings, and 26, Richmond terrace.
	1st Mar., 1866.	*Barrow, S., 323, Vauxhall road, and Seaforth.
	7th Feb., 1861.	*Bartlett, William, 22, North John street.
	8th Mar., 1866.	*Bath, James P., Garston old road, Aigburth.
	1st Dec., 1864.	*Bath, John D., Garston.
	12th Jan., 1860.	*Bath, William H. P.
	6th March, 1862.	*Bazley, Thomas*, M.P., Hayesleigh, Manchester, and Reform Club, London, S.W.

P.	6th Dec., 1849.	Beamont, William, Warrington.
	21st May, 1857.	*Bean, Edwin, Revenue buildings.
	15th April, 1858.	*Bell, Christopher, Back Goree.
	23rd Nov., 1848.	*Bell, Henry, Hamilton square, and Grosvenor road, Claughton, Birkenhead.
P.	1st Dec., 1864.	*Benas, B. L., 5, South Castle street.
	23rd Nov., 1848.	*Bennett, William, Sir Thomas's buildings, and 109, Shaw street.
	7th March, 1850.	Birch, Sir Thomas Bernard, Bart., The Hazles, Prescot.
	23rd Nov., 1848.	Birchall, Lieut.-Col. Thomas, Ribbleton hall, Preston.
	4th March, 1852.	Birley, Rev. John Shepherd, Moss Lea, Bolton le-Moors.
P.	8th Jan., 1852.	Birley, T. Langton, Carr hill, Kirkham.
	6th Dec., 1855.	Black, J., M.D., F.G.S., 2, George's square, Edinburgh.
	23rd Nov., 1848.	Blackburne, John Ireland, The Hall, Hale.
	20th Sept., 1854.	Blackmore, William.
	20th Sept., 1854.	*Bloxam, Frederick William.
	23rd Nov., 1848.	*Blundell, Thomas Weld, Ince Blundell hall, Great Crosby.
	5th May, 1853.	Booth, Benjamin Witham, Swinton, Manchester.
	1st May, 1856.	Booth, John Billington, Overleigh house, Preston.
	15th Dec., 1853.	Bossi, Arthur, Paris.
	3rd Jan., 1856.	*Bouch, Thomas, 1, Oldhall street, and New Brighton.
P.	23rd Nov., 1848.	*Boult, Joseph, Exchange buildings West, and Parkfield road, Aigburth road.
	8th Dec., 1851.	Bourne, Cornelius, Stalmine hall, Preston.
	15th April, 1858.	*Bower, Anthony, Vauxhall foundry, & Seaforth.
	6th Dec., 1855.	Bowes, John, Blue Coat School, Warrington.
	13th Nov., 1851.	Brackstone, R. H., Lyncombe hill, Bath.
	15th Dec., 1853.	Bradbury, Charles, Salford crescent, Manchester.
	17th Dec., 1857.	*Bradley, William Gibson, 52, Bold street, and 18, Kenyon terrace, Birkenhead.
	23rd Nov., 1848.	*Brakell, Thomas. 7, Cook street, and 23, Richmond terrace, Everton.
	Mayor Liv., 1848-9.	*Bramley-Moore, John, Hon. Mem. Archæol. Association, Aigburth.
	30th Dec., 1854.	Brent, Francis, Custom house, Plymouth.
P.	7th May, 1863.	*Bright, E. B., 2, Exchange buildings, and Waterloo.
P.	9th March, 1854.	*Bright Henry Arthur, A.M., Fairfield, and 1, North John street.
	4th Feb., 1864.	Bright, Sir Charles Tilston, M.P., C.E., F.R.S., 12, Hyde park gardens, London.
	3rd May, 1849.	Brooke, Henry, Forest hill, Northwich.
	6th March, 1851.	*Brooke, Richard, jun.*, Norton priory, Runcorn.
	15th March, 1855.	*Browne, G. Mansfield, 15, South hill, Park rd.
	11th Sept., 1854.	*Burke, William, 17, Bagot street, Smithdown road, Treasurer.

17th Sept., 1854. Burnell, Rev. Samuel, A.M., Winwick, Warrington.

P. 15th Dec., 1853. *Buxton, David, F.R.S.L., Principal of the Liverpool Deaf and Dumb Institution, Oxford street, Hon. Librarian.

C

23rd Nov., 1848. *Caine, Nathaniel, 12, Dutton street.

3rd Dec., 1857. *Calder, Rev. William, A.M., Fairfield.

1st Dec., 1859. Callender, W. Romaine, jun., F.S.A., Ashburne house, Rusholme, Manchester.

P. 6th Dec., 1855. Calvert, F. Crace, Ph.Dr., F.R.S., F.C.S., M.R.A. Turin, Royal Institution, Manchester.

23rd Nov., 1848. *Campbell, Rev. Augustus, A.M., 131, Duke street, and the Vicarage, Childwall.

18th Dec., 1856. *Campbell, Wm., Captain & Adjutant R.L.M.A., Artillery barracks, Rupert lane.

6th Dec., 1859. *Casson, William.

27th Sept., 1854. *Casey, George.

3rd Dec., 1857. *Chadburn, Charles Henry, 71, Lord street, and Egremont, Birkenhead.

H. Sh. Chesh., 1855-6. *Chapman, John*, M.P., Hill End, Mottram-in-Longdendale.

Cheshire, the High Sheriff of, Vice-President, *ex officio*.

23rd Nov., 1858. *Clare, John Leigh, 11, Exchange buildings, and Richmond terrace, Breck road.

14th April, 1859. *Clement, Leonard*, Nelson-in-Marsden, near Burnley.

14th Dec., 1865. *Cohen, Louis S.

P. 24th May, 1855. *Comber, Thomas*, Hargreaves buildings, Chapel street.

18th Dec., 1856. Corser, Rev. Thomas, A.M., Stand, Manchester.

7th Dec., 1865. *Critchley, W.

6th Dec., 1849. *Crosfield, Henry, 4, Temple place, and Edge mount, Edge lane.

9th Jan., 1862. Cross, Richard Assheton, Hill Cliff, Warrington.

23rd Nov., 1848. Crosse, Thomas Bright, Shawe hill, Chorley.

2nd May, 1850. Crossley, James, F.S.A., President of the Chetham Society, 6, Booth street, Piccadilly, Manchester.

P. 23rd Nov., 1848. *Cust, General the Hon. Sir Edward, K.C.H., D.C.L., F.R.S., Leasowe Castle, Cheshire, Claremont, Surrey, and Hill street, London.

D

23rd Sept., 1854. *Davies, Comenius, 8, Kinglake street.

P. 3rd March, 1864. *Davies, John, 6, Kinglake street.

19th March, 1863. Dawson, E.

23rd Nov., 1848. **Dawson, Henry*, 30, Redcross street, and 15, St. James's road

P. 2nd May, 1850. *Dawson, Thomas, M.R.C.S. Eng., 26, Rodney st.

23rd April, 1857. *Devonshire, His Grace the Duke of*, K.G., D.C.L., F.R.S., Chatsworth, Derbyshire, and Devonshire house, London.

P. 7th March, 1853. *Dove, Percy M., F.S.S., F.I.A., Royal Insurance office, 1, North John street, and Castledon lodge, Claughton road, Birkenhead.

4th Nov., 1858. *Drysdale, C. Alexander, 7, Elm terrace, Fairfield.

23rd Nov., 1848. *Duarte, Ricardo Thomaz, 2, Royal Bank buildings.

13th Sept., 1854. *Duncan, Thomas.

E

5th Nov., 1863. *Eastee, George, 6, Harrington street.

1st Jan., 1857. *Eaton, Francis James, Richmond terrace, Breck road, and 18, Queen Insurance buildings.

9th Dec., 1852. *Eckersley, Thomas*, Wigan.

6th March, 1862. *Edwards, Edward, Adelaide buildings, Chapel street, and Holly lodge, Fairfield.

6th March, 1862. Egerton, Hon. Algernon, M.P., Worsley Old hall, Manchester, Vice-President.

7th Jan., 1851. *Egerton, Hon. Wilbraham*, M.P., Rosthern hall, Knutsford.

6th March, 1862. *Egerton of Tatton, Rt. Hon. the Lord*, Tatton park, Knutsford.

P. 23rd Nov., 1848. *Egerton, Sir Philip de Malpas Grey*, Bart., M.P., F.R.S., F.G.S., Oulton park, Tarporley.

23rd Nov., 1848. *Evans, Edward, 56, Hanover street.

P. 4th Nov., 1858. *Evans, Edward Francis, Revenue buildings.

8th Nov., 1849. *Evans, Thomas Bickerton, 56, Hanover street.

23rd Nov., 1848. *Ewart, Joseph Christopher, 64, Pall Mall, London, and New Brighton.

6th May, 1852. *Ewart, William*, M.P., 6, Cambridge square, Hyde park, London, and Broadleas, Devizes.

F

7th Feb., 1861. *Fabert, J. O. W., 3, St. James's walk.

3rd Dec., 1857. Fairbairn, William, F.R.S., Manchester.

23rd Nov., 1848. *Finlay, William, Liverpool College.

P. 15th April, 1858. *Forrest, J. A., 58, Lime street, and 5, Charlesville, Claughton, Birkenhead.

5th Dec., 1850. Forster, Wilson.

6th March, 1862. *Fort, Richard*, M.P., Woolley hall, Maidenhead, and Read hall, Clitheroe.

23rd Sept., 1854. *Forwood, T. B., 11, Dale street, and The Hollies, Fairfield.

7th May, 1857. *Frackelton, Rev. S. S.*, A.M., Ballynahinch, Ireland.

15th Dec., 1853. Franks, Augustus Woollaston, A.M., F.S.A., British Museum, London.

6th Jan., 1853. *French, Gilbert Jas.*, F.S.A., F.G.H.S., Corr. Mem. S.A. Scot., Bolton.
7th Jan., 1858. Frost, Meadows, 25, The Albany, Oldhall street, and St. John's house, Chester.

G

14th Dec., 1848. *Gardner, Richard Cardwell, Colonial buildings, 34, Dale street, and Newsham house.
3rd May, 1849. Garnett, Wm. J., Quernmore park, Lancaster.
23rd Nov., 1848. *Gaskell, John Rooth, Exchange court, Exchange street East.
18th Dec., 1856. *Gerard, Henry, 10, Rumford place.
P. 20th Nov., 1856. *Gibson, A. Craig, F.S.A., Stonesfield, Bebington, Birkenhead, Hon. Curator.
P. 1st May, 1862. *Gibson, J. H., 144, Vauxhall road.
P. 5th Nov., 1863. *Gibson, Thomas, 37, Oxford street.
3rd Dec., 1863. Gill, Chapple, Gateacre.
6th March, 1862. *Gladstone, Right Hon. W. E.*, M.P., 11, Carlton house terrace, London, S.W., President.
4th Dec., 1862. *Goodier, Thomas, 9, Lord street.
19th Dec., 1852. *Graves, Samuel Robert, M.P., 13, Redcross st.
21st Sept., 1854. Gray, Rev. R. H., A.M., Kirkby, Prescot.
14th Dec., 1848. Gray, Thomas, Manager and Secretary, Unity Insurance office, London.
6th Feb., 1851. Gray, Lieut.-Colonel, M.P., Darcy Lever hall, Bolton.
2nd Dec., 1858. *Greame, Malcolm, Colonial buildings, Dale st.
4th Dec., 1862. Green, John Henry, Buenos Ayres.
23rd Nov., 1848. Greenall, Venerable Archdeacon, Stretton, Warrington.
16th Sept., 1854. Greene, John Stock Turner, Adlington hall, Chorley.
1st Dec., 1864. *Greenwood, Henry, 32, Castle street.
31st Aug., 1854. Grenside, Rev. William Bent, A.M., Melling Vicarage, Lancaster.
19th March, 1857. *Grimmer, W. Henry, Prince's buildings, 30, North John street.
13th March, 1862. Grosvenor, Rt. Hon. the Earl, M.P., Calveley, Tarporley.
8th Nov., 1849. *Guyton, Joseph.

H

1st Dec., 1864. *Haigh, Thomas, 47, Boundary lane.
21st May, 1857. *Hall, Charlton R., 19, Dale street, and Liscard castle, Birkenhead.
1st May, 1862. *Hall, J. J.*
10th Dec., 1857. *Hancock, Thomas S., Sweeting street, and Birkenhead.
6th April, 1865. *Harding, Joseph, Marlborough house, Claughton, Birkenhead.

P.	6th March, 1856.	Hardwick, Chas., 148, Embden street, Hulme, Manchester.
	12th Jan., 1854.	*Harrison, Wm.*, F.S.A., F.G.S., F.R.S.N. Antiq., &c., Galligreaves hall, Blackburn; Samlesbury hall, Preston; Conservative Club, St. James's, S.W.; and R.T.Y. Club, Albemarle street, W.
	9th Feb., 1864.	*Harrowby, Rt. Hon. the Earl of*, D.C.L., F.R.S., Sandon hall, Staffordshire, and 39, Grosvenor square, London.
	23rd April, 1857.	*Hartington, Most Noble the Marquess of*, M.P., Chatsworth, Derbyshire, & Devonshire house, London.
	10th Feb., 1853.	**Hartley, John Bernard*, The Grove, Allerton.
P.	11th Oct., 1854.	*Hartnup, J., F.R.A.S., Observatory.
	14th April, 1864.	*Haughton, Thomas, Blue Coat Hospital.
	23rd Nov., 1848.	Hawkins, Edward, F.R.S., V.P.S.A., F.L.S., British Museum, London.
	8th Dec., 1864.	Heald, Thomas, Greenfield, Billinge, Wigan.
	27th Sept., 1854.	*Healey, Samuel R., 48, Castle street, and West bank, Woolton.
	24th Oct., 1854.	Heginbottom, George, Birkdale park, Southport.
	4th May, 1865.	*Heintz, Louis W., Lancaster buildings, Tithebarn street.
	8th May, 1856.	*Henderson, William, 13, Church street, and Rock park, Birkenhead.
	23rd Nov., 1848.	*Heywood, James*, F.R.S., F.S.A., F.G.S., 26, Kensington Palace Gardens, London, W.
	23rd Nov., 1848.	*Heywood, Sir Benjamin*, Bart., F.R.S., F.S.S., Claremont, Manchester.
P.	23rd Nov., 1848.	*Heywood, Thomas*, F.S.A., Hope end, Ledbury, Herefordshire.
P.	4th Jan., 1849.	*Hibbert, Thomas Dorning.
P.	12th Sept., 1854.	Higgins, Rev. Henry H., A.M., Rainhill.
P.	23rd Nov., 1848.	Hill, Rev. John Wilbraham, M.A., Waverton, Cheshire.
P.	21st Sept., 1854.	Hill, Samuel.
P.	8th Dec., 1851.	Hinde, John Hodgson, Stelling hall, Newcastle-upon-Tyne.
	23rd Sept., 1854.	*Hindmarsh, Fred.*, F.G.S., F.R.G.S., Bucklersbury, London.
	12th Jan., 1860.	*Holden, Adam, 48, Church street.
	18th Jan., 1866.	*Holden R., 57, Dale street.
	18th Dec., 1856.	*Holden, Thomas*, Springfield, Bolton.
	13th Feb., 1862.	Holt, Charles, Beech house, Sharples, near Bolton.
	24th Sept., 1854.	*Holt, William D., 23, Edge lane.
	1st Dec., 1864.	*Hornby, William Pitt, North Western bank (Limited), Dale street.
	7th May, 1857.	*Horner, W., 34, South Castle street, and Eldon house, Oxton.
	23rd Nov., 1848.	*Horsfall, Thomas Berry, M.P., Bellamour hall, Staffordshire.
	6th Dec., 1860.	*Houghton, James, 84, Rodney street.

14th April, 1853. **Houghton, Richard H., jun.*, Sandheys, Waterloo.
4th Dec., 1856. *Howell, Edward, 6, Church street.
Mayor Lan., 1849-50. Howitt, Thomas, Lancaster.
P. 8th Nov., 1849. Howson, Rev. John Saul, D.D.
27th Sept., 1854. *Hubback, Joseph, 1, Brunswick street, and Aigburth.
P. 10th Dec., 1857. *Hughes, John R., 30, Chapel street.
14th Sept., 1854. *Hughes, Joseph, 2, Upper Duke street, and 9, Brownlow hill.
16th Sept., 1854. *Hughes, J. B., 5, Wesley place, and 4, Clayton square.
6th April, 1854. Hughes, Thomas, 2, Groves terrace, Chester.
8th Feb., 1862. Hulton, William Adams, Hurst grange, Preston.
Mayor Ch. 1851-52. Humberston, Philip Stapleton, Chester.
P. 23rd Nov., 1848. **Hume, Rev. Abraham*, D.C.L., LL.D., F.S.A., F.S.S., F.R.S. North. Ant. Copenhagen, Corr. Mem. S.A. Scot., Hon. Mem. of the Society of Antiquaries, Newcastle-upon-Tyne, 24, Fitz-Clarence street, Vice-President.
21st May, 1857. *Hume, Hamilton*, F.R.G.S., Cooma, Yass, New South Wales.
6th Jan., 1859. *Hunt, Richard.
11th Feb., 1864. *Hussey, John.
9th Dec., 1853. *Hutchison, Robert, 12, Sweeting street, and 6, Canning street.

J

1st April, 1852. *Jacob, John Gibborn, 56, Church street.
5th Dec., 1861. Jackson, William, Fleatham house, St. Bees.
23rd Nov., 1848. Jacson, Charles R., Barton hall, Preston.
P. 2nd May, 1861. *Jeffery, F. J., 45, Church street, and Woolton hall.
21st May, 1857. *Jeffery, James Reddecliff, 45, Church street, and Woolton hall.
23rd Nov., 1854. *Jeffery, William Reddecliff, 45, Church street, and 15, Deane street.
1st Dec., 1864. *Johnson, D., Brougham terrace.
23rd Nov., 1848. Johnson, John H., 7, Church street, and Southport.
23rd Sept., 1854. Jones, Edward, The Larches, Handsworth.
3rd Jan., 1861. *Jones, George, 36, Hanover street.
3rd May, 1849. *Jones, Morris Charles, 20, Abercromby square.
2nd Dec., 1858. *Jones, Robert, 7, Batchelor street.
6th Dec., 1849. *Jones, Roger L., 1, Belvidere road, Prince's park.
15th Sept., 1854. Jones, Thomas, B.A., Chetham Library, Manchester.
11th Dec., 1856. Jones, W. Hope, Hooton, Chester.

K

5th Dec., 1861. Kendal, John, Fishergate, Preston.
P. 3rd May, 1849. Kendrick, James, M.D., Warrington.

11th Dec., 1856. Kershaw, James, M.P., Oaklands, Victoria park, Manchester.
4th Dec., 1862. *King, Lieut.-Col. Vincent Ashfield, 18, Tower chambers, and Point of Ayr, Oxton.
5th Nov., 1863. *King, John Thomson, Clayton square.
21st May, 1857. *Kitchen, Joseph, Exchange street East, and Oak house, West Derby.

L

6th March, 1862. *Laird, John, M.P., Hamilton square, Birkenhead.
LANCASHIRE, THE HIGH SHERIFF OF, VICE-PRESIDENT *ex officio*.
23rd Nov., 1848. Langton, William, Manchester.
23rd Nov., 1848. Legh, G. Cornwall, M.P., High Legh, Knutsford.
1st Dec., 1859. *Legh, W. J.*, Lyme park, Disley, Stockport.
10th Dec., 1857. *Leigh, Major Egerton*, The West hall, High Leigh, Knutsford.
4th March, 1858. Lindsay, Right Hon. the Lord, M.P., Haigh hall, Wigan.
23rd Nov., 1848. Lingard, Alexander Rowson, Hooton, Chester.
*LIVERPOOL, THE MAYOR OF, VICE-PRESIDENT *ex officio*.
6th Jan., 1853. *Longton, John.

M

6th March, 1862. McCorquodale, Lieut.-Colonel G., Newton-le-Willows.
14th Feb., 1861. McGill, Robert, Copperas hill, St. Helens.
15th April, 1858. *McInnes, J , 23, Lightbody street.
27th Sept., 1854. *Macfie, Robert Andrew, 30, Moorfields, and Ashfield hall, Neston.
23rd Nov., 1848. *M'QUIE, PETER ROBINSON, 9, Brunswick street, and Thornton lodge, Merton road, Bootle.
5th May, 1853. **Macrae, John Wrigley*, 22, Hackin's hey, and Seaforth house, Seaforth.
3rd Jan., 1849. *Manchester, the Lord Bishop of*, F.R.S., F.G.S., Mauldeth hall, Manchester.
23rd Nov., 1848. *Marsden, George, Vernon priory, Edge hill.
1st Dec., 1859. Marsh, John, Rann lea, Rainhill.
P. 5th June, 1851. MARSH, JOHN FITCHETT, Fairfield house, Warrington.
1st Dec., 1864. Marson, James, Warrington.
1st Dec., 1864. *Mathews, John, Highfield, Rock Ferry, Birkenhead.
6th March, 1862. *MATHISON, WM., 1, Adelaide terrace, Waterloo.
P. 23rd Nov., 1848. *MAYER, JOSEPH, F.S.A., M.R. Asiat. S., F.E.S., F. R. S. North. Ant. Copenhagen, Associé étranger de la Société Impériale des Antiquaires de France, Hon. Mem. SS. Anti., Normandie, l'Ouest, la Morinie, Société d'Emulation d'Abbeville, &c., 68, Lord street.

P. 15th April, 1858. *Mercer, Nathan, F.C.S.
7th Dec., 1865. *Miller, Henry, Toxteth dock.
1st Dec., 1864. *Millichap, G. T.
2nd Jan., 1862. Milligan, James, jun., Longview, Huyton.
21st Feb., 1861. Mills, John, Middle School, Warrington.
20th May, 1860. Mills, Robert, F.S.A., F.G.S, 27, Promenade, Rochdale.
P. 21st Dec., 1854. *Milner, William, 322, Upper Parliament street, and Phœnix Safe Works, Windsor.
3rd Dec., 1857. Moore, Rev. Richard R., A.M., Bewsey street, Warrington.
P. 8th Nov., 1849. Moore, Rev. Thomas, A.M., Midleton College, County Cork.
P. 23rd Nov., 1848. *Moss, Rev. John James, A.M., Upton, Cheshire.
P. 7th March, 1850. *Mott, Albert J., 21, South Castle street, and 51, Rodney street.
3rd Dec., 1863. Moubert, Adolphus, Garswood-Ashton, Warrington.
3rd Dec., 1857. Moult, William, 21, Leigh street, and Knowsley.
21st May, 1857. *Mozley, Charles, Beaconsfield, Woolton.
11th Dec., 1856. Myres, John James, Bank parade, Preston.

N

3rd Dec., 1863. Naylor, Benjamin Dennison, 38, Deansgate, and Altrincham, Manchester.
H.S. Ches. 1857. *Naylor, Richard*, Hooton hall, Chester.
15th April, 1858. *Newlands, J.
19th March, 1863. Newsham, Richard, Preston.
23rd Nov., 1848. Nicholson, James, F.S.A., Thelwall hall, Warrington.
6th March, 1862. *Norbury, Richard.
29th Sept., 1854. *Nottingham, John, M.D., F.R.A.S., F.R.S., Northern Antiquaries, Copenhagen, 20, Roscommon street.

O

P. 6th Dec., 1849. Ormerod, George, D.C.L., F.R.S., F.S.A., F.G.S., Sedbury park, Chepstow.
3rd Jan., 1850. *Overend, James, 55, Hope street.
3rd Dec., 1857. Oxley, Frederick.

P

23rd Nov., 1858. *Paris, Thomas Jeremiah, 68, Lord street.
3rd Jan., 1850. *Parker, Charles Stewart, Bank chambers, Cook street.
18th Dec., 1856. Parker, Robert Townley, Cuerdon hall, Preston.
7th March, 1850. *Patten, John Wilson*, M.P., Bank hall, Warrington.
2nd Nov., 1854. Patterson, Andrew, Principal of the Deaf and Dumb Institution, Manchester.

6th Dec., 1849. Pearce, George Massie, Hackin's hey, and Ormskirk.
11th Dec., 1856. *Pedder, Henry Newsham*, 9, Queen's gate, Prince Albert road, South Kensington, London, S.
23rd Nov., 1848. Pedder, Richard, West cliff, Preston.
1st Dec., 1864. Perry, Rev. S. G. F., Incumbent of Tottington, near Bury.
21st March, 1860. Petty, Thomas Shaw, Preston.
P. 6th Jan., 1849. *Picton, James Allanson, F.S.A., Queen Insurance buildings, Dale street, and Sandyknowe, Wavertree.
3rd May, 1849. Pierpoint, Benjamin, St. Austin's, Warrington.
23rd Nov., 1848. Pilkington, James, Park place House, Blackburn.
10th Feb., 1853. *Platt, Robert*, Stalybridge.
1st Dec., 1864. *Porter, John, Clayton square.
8th Dec., 1864. *Porter, Thomas A., 9, Church street, Everton.
12th March, 1857. *Preston, Geo. Theo. Robert, 13, Vernon street, Dale street, and Rock house, West Derby road.
6th Dec., 1849. *Preston, William, 13, Vernon street, and Rock house, West Derby road.
44th Jan., 1864. *Priest, Thomas E., Clarendon rooms, South John street.

R

23rd Sept., 1854. *Rathbone, William, 24, Water street, & Greenbank, Wavertree.
15th March, 1849. Rawlinson, Robert, C.B., C.E., F.G.S., Sanitary Commissioner, Local Government Act Office, 8, Richmond terrace, Whitehall; Lancaster lodge, Boltons, West Brompton; and Reform Club, London, S.W.
13th Sept., 1854. *Raynes, James Trevelyan, 37, Oldhall street, and Rock park, Rock Ferry.
5th Dec., 1861. *Read, Joseph, Linden house, Laurel road, Fairfield.
23rd Nov., 1848. *Reay, James, Guardian office, Commerce court, Lord street.
29th Dec., 1854. Rees, William, Old Trafford, Manchester.
3rd Dec., 1863. Rhodocanakis, H. H. the Prince, Manchester.
20th Dec., 1855. Robin, Rev. P. R., A.M., Woodchurch, Birkenhead.
23rd Nov. 1848. *Robinson, Charles Backhouse.
1st Dec., 1864. *Robinson, John, 41, Lord street.
3rd Jan., 1850. *Ronald, Robert Wilson, 19, Dale street.
15th April, 1858. Rooke, Rev. W. J. E., Tunstal Vicarage, Kirby Lonsdale.
11th Feb., 1864. *Rowe, Charles, Elm house, Anfield
15th April, 1858. Rowlinson, W., Windermere
P. 1st Dec., 1864. *Rundell, W. W., 21, Exchange buildings.
25th Sept., 1854. Rylands, Peter, Bewsey house, Warrington.
P. 13th Dec, 1854. Rylands, Thomas Glazebrook, F.L.S., F.G.S., Warrington.

S

	3rd Jan., 1861.	Samuelson, Edward, Roby.
	6th Dec., 1855.	*Sandbach, W. R., Bank buildings, Cook street, and The Cottage, Aigburth.
P.	7th Sept., 1851.	*Sansom, Thomas, F.B.S.E., 18, Breckfield road South, Everton.
	19th March, 1863.	Satterthwaite, Edward, Lancaster.
	H.S. Lan., 1862.	Saunders, W. A. F., Wennington hall, Lancaster.
	3rd Dec., 1863.	Scott, George, 53, Burlington street, Greenheys, Manchester.
	8th Jan., 1852.	Sharp, John, The Hermitage, Lancaster.
	2nd June, 1853.	*Sharpe, William*, 102, Piccadilly, London.
	14th Jan., 1864.	*Sharp, William, 17, Brunswick street, and Alton villa, Oxton, Birkenhead.
	23rd Nov., 1848.	Sharpe, Edmund, A.M., Cwm Alyn, Llanrwst, North Wales.
	1st Dec., 1855.	*Shawe, J. R.
	7th Feb., 1850.	*Sherlock, Cornelius, 22, King street.
	23rd Nov., 1848.	*Simpson, Rev. Samuel*, A.M., St. Thomas's Parsonage, Douglas, Isle of Man.
	23rd Nov., 1848.	Skaife, Thomas, 32, Sussex place, Regent's park, London.
P.	16th April, 1863.	*Smith, Henry Ecroyd, Aldboro' house, Egremont, Birkenhead.
	2nd May, 1850.	**Smith, James*, Seaforth.
	16th Sept., 1864.	Smith, John, Langley, near Macclesfield.
	6th Jan., 1853.	*Smith, William Penn, 26, Hanover street.
	4th Dec., 1862.	Somerville, Thomas, LL.D., Hawthorn hall, Wilmslow, Manchester.
	12th March, 1863.	*Squarey, Andrew Tucker, Apsley villas, Lower Bebington.
	2nd Nov., 1854.	Stainer, William, Old Trafford, Manchester.
	3rd Jan., 1856.	*Staniforth, Rev. Thomas*, Storrs, Windermere.
	6th March, 1862.	*Stanley, The Lord*, M.P., Knowsley hall, Lancashire, and 23, Saint James's square, London, S.W.
	5th Feb., 1863.	Steele, Alexander, Ph.Dr., Bay View house, The Crescent, Douglas, Isle of Man.
	13th Dec., 1855.	*Steiner, F.*, Hyndburn, Accrington.
	30th Dec., 1854.	*Stewart, James Gordon, Woodlands, Clifton park, Birkenhead.
P.	6th March, 1862.	*Stonehouse, James, 149, Phythian street.
	4th March, 1852.	*Sykes, James, Colonial buildings, 34, Dale street, 78, Rodney street, and Breck house, Poulton-le-fylde.

T

	18th Feb., 1858.	*Thompson, Henry, 153, Upper Parliament street, and 11, North John street.
P.	8th Dec., 1851.	Thornber, Rev. William, B.A., Blackpool.
	13th Sept., 1854.	*Thornely, Samuel, 31, Edge lane.

P. 8th Dec., 1851. *Tinne, John A., F.R.G.S., Briarley, Aigburth, Vice-President.
14th Dec., 1848. Tobin, Sir Thomas, F.S.A., Ballincollig, Cork.
8th Jan., 1852. *Torr, John, 15, Exchange buildings, and Eastham.
H.S. Lanc., 1857. Towneley, Charles, Towneley, Burnley.
P. 2nd April, 1857. *Towson, John Thomas, F.R.G.S., 47, Upper Parliament street, and Sailors' Home.
14th April, 1863. *Turner, Charles, M.P., 4, Lancelot's hey, and Dingle head.
27th Sept., 1854. *Turner, John Hayward, 23, Abercromby square.
6th Dec., 1849. Turner, Edward, High street, Newcastle, Staffordshire.
16th Dec., 1858. *Tuton, E. S.

U

8th March, 1854. Underwood, Rev. Charles W., A.M.

V

23rd Nov., 1848. *Varty, *Thomas*, Stag-stones, Penrith.
14th April, 1853. *Vose, James, M.D., 5, Gambier terrace, Hope street.

W

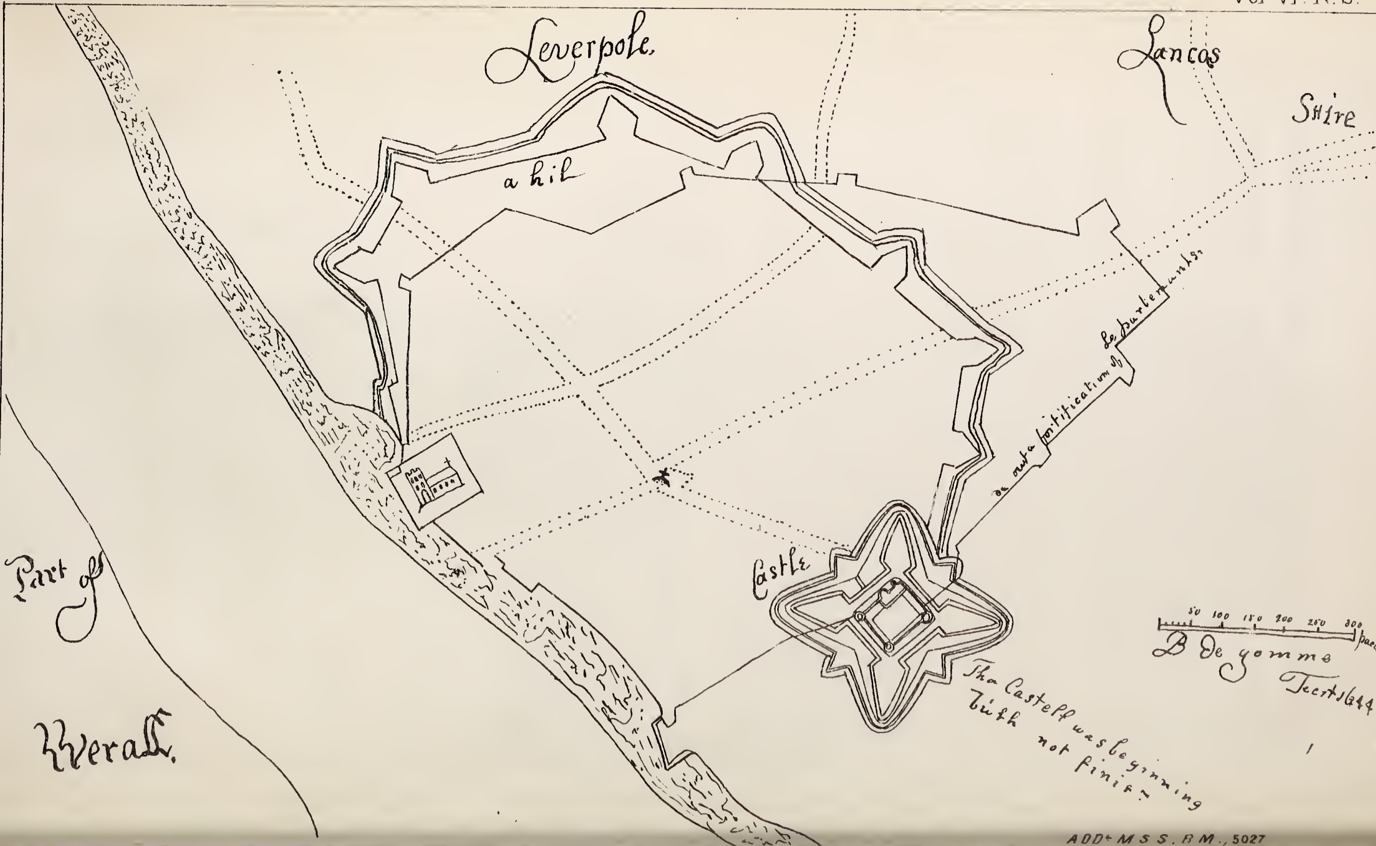
Myr. C. 1838-39, 48-49. *Walker, Sir Edward Samuel*, Berry hill, Mansfield, Notts.
11th Dec., 1856. *Walmsley, Thomas*, Preston.
6th March, 1851. Warburton, Rowland Eyles Egerton, Arley hall, Cheshire.
21st May, 1857. Ward, John Angus, Hooton Lodge, Chester.
3rd May, 1864. *Waterhouse, John Dockray, 1, Oldhall street.
P. 5th Dec., 1861. *Waterhouse, Nicholas, Rake lane, Honorary Secretary.
17th Dec., 1857. Watts, Sir James, Manchester.
2nd May, 1850. *Way, Albert*, A.M., F.S.A., Wonham manor, Reigate, Surrey.
1st Feb., 1849. *Webster, George, 6, York buildings, Dale street, and Mosley hill, Aigburth.
P. 3rd Jan., 1856. *Welton, Thomas A.*, F.S.S., 91, Mortimer road, De Beauvoir square, London, N.
6th March, 1862. Wensleydale, Rt. Hon. the Lord, Ampthill park, Ampthill.
2nd June, 1853. *Whitley, George, 5, Clayton square, and Bromborough.
9th Oct., 1854. Whitley, Rev. John, A.M., Newton rectory, Warrington.
6th June, 1850. Whitley, Rev. William, B.A., Catsclough, Winsford, Cheshire.
P. 30th Nov., 1854. Wilkinson, Thomas Turner, F.R.A.S., Corr. Mem. Lit. and Phil. Soc. Manch., Burnley.

8th Jan., 1852. *Willoughby, Edward G., 3, Mersey street, Birkenhead.
14th Feb., 1861. Wilson, J. M., Hardshaw street, St. Helens.
23rd Nov., 1848. Wood, Isaac Moreton, Newton, near Middlewich.
7th Dec., 1865. *Wood, R. H.*, Crumpsall, Manchester.
7th May, 1855. **Woodhouse, John George*, 117, Henry street.
11th Jan., 1866. *Wright, James Powell, 23, York terrace.

HONORARY MEMBERS.

6th Feb., 1851. Akerman, John Yonge, Hon. M.R.S.L.,; F.S.A. Newcastle; F.R.S. of Northern Antiquities; Corr. Mem. SS. Antiq. Scot., France, Russia, Switzerland, Rome; Hon. Mem. Roy. Acad., Stockholm; Somerset House, London.
27th Sept., 1854. Babington, Charles Cardale, A.M., F.R.S., F.S.A., F.L.S., Professor of Botany, Cambridge.
6th Feb., 1851. Blaauw, William Henry, A.M., F.S.A., Beechland, Uckfield.
6th Feb., 1851. Boileau, Sir John P., Bart., F.R.S., F.S.A., Ketteringham hall, Wyndham, Norfolk, and 20, Upper Brook street, Grosvenor square, London.
27th Sept., 1854. Brewster, Sir David, K.H., D.C.L., LL.D., F.R.SS.L. and E., Hon. M.R.I.A.; one of the Eight Foreign Associates of the Academy of Sciences, in the Imperial Institute of France; and Hon. or Corr. Member of the Academies of Berlin, St. Petersburg, Vienna, Munich, Göttingen, Turin, and Modena; and Principal of the University of Edinburgh; College, Edinburgh, and Allerly, Roxburghshire.
1st Nov., 1860. Brown, James, New York, U.S.A.
6th Feb., 1851. Charlton, Edward, M.D., F.S.A. Newc., 7, Eldon square, Newcastle-upon-Tyne.
P. 1st Feb., 1855. Clarke, Joseph, F.S.A., Saffron Walden, Essex.
19th May, 1859. Cochet, M. L'Abbé, Inspector of Antiquities and Monuments in Normandy, Dieppe.
27th Sept., 1854. Gray, John Edward, Ph.D., F.R.S., F.L.S., V.P.Z.S., Pres. Entom. Soc., &c., British Museum, London.
P. 27th Sept., 1854. Latham, R. Gordon, M.D., F.R.S.
9th Dec., 1852. MacAdam, Robert, 18, College square East, Belfast.
27th Sept., 1854. Murchison, Sir Roderick Impey, G.C. St. S., A.M., D.C.L., F.R.S., V.P.L.S., F.G.S., P.R. Geogr. S., Hon. M.R.I.A., Director-General of the Geological Survey of Great Britain and Ireland; Trust. Brit. Mus.; Hon. Mem. Acadd. St. Petersburgh, Berlin, Copenhagen; Corr. Mem. Inst. France, &c., 16, Belgrave square, London.

	27th Sept., 1854.	Owen, Richard, M.D., LL.D., F.R.S., F.L.S., F.G.S., British Museum, London.
P.	7th May, 1851.	Pidgeon, Henry Clarke, 10, St. Leonard's terrace, Maida hill West, London.
	27th Sept., 1854.	Phillips, John, M.A., LL.D., F.R.S., F.G.S., Professor of Geology, and Keeper of the University Museum, Oxford; Hon. Mem. Imp. Acad., Moscow; Société Vaudoise, &c., Oxford.
	27th Sept., 1854.	Rosse, the Earl of, K.P., D.C.L., F.R.S., F.S.A., F.R.A.S., F.G.S., Birr Castle, Parsonstown, Ireland.
	27th Sept., 1854.	Sabine, Major-General Edward, R.A., D.C.L., LL.D., Pres. R.S., F.R.A.S., 13, Ashley place, London, S.W., and Woolwich.
	27th Sept., 1854.	Sedgwick, Rev. Adam, A.M., F.R.S., F.G.S., F.R.A.S., Hon. M.R.I.A., Woodwardian Professor, Trinity College, Cambridge.
P.	6th Feb., 1851.	Smith, Charles Roach, F.S.A., Member of the Roy. Soc. North. Antiq. Copenhagen, Hon. Mem. SS. Antiq., France, Normandy, Scotland, Spain, Newcastle, the Morinie, Abbeville, Picardy, Wiesbaden, Luxemburg, Treves, Touraine, &c., Temple place, Strood, Kent.
	27th Sept., 1854.	Whewell, Rev. William, D.D., F.R.S., F.G.S., F.R.A.S., Hon. M.R.I.A., Corr. Mem. of the Institute of France, Master of Trinity College, Cambridge.
	6th Feb., 1851.	Willis, Rev. Robert, A.M., F.R.S., Jacksonian Professor, Cambridge, and 23, York terrace, Regent's park, London.
P.	27th Sept., 1854.	Wright, Thomas, A.M., F.S.A., Hon. M.R.S.L., Member of the Institute of France; of the Roy. Soc. North. Antiqs. Copenhagen; Hon. Mem. of the Soc. of Antiquaries of France; Corresp. Mem. Soc. Antiq. Normandy; of Soc. Antiqs. Scotland, &c., 14, Sydney street, Brompton, London.



ADD^t MSS. B.M., 5027

TRANSACTIONS.

CHANGES IN THE SEA COAST OF LANCASHIRE AND CHESHIRE.

By the Rev. A. Hume, D.C.L., LL.D., Vice-President.

(Read July 10th and November 16th, 1865.)*

I.—Introduction.

In the autumn of 1863 I published a book entitled *Ancient Meols*,† giving an account of some thousands of antiquarian objects which had been discovered, during many years, on the sea coast of Cheshire. The portion of the work which contains a detailed account of these objects, extends over 316 pages.

It was not necessary that I should either (1) enter upon a description of the district in which they were procured, or (2) that I should try to account for their unexpected presence within the range of tidal action; because their ages and uses had already been fixed approximately, by Archæologists, without reference to their origin or to the locality. Still, in order to put the reader in possession of secondary and collateral facts, as well as of primary, and to afford him the best means of judging, I did offer some remarks on both

* The two parts are combined in the printing. [Thus the present Paper comprises (1) Dr. Hume's reply to Mr. Boult's paper of April, 1865; (2) original matter to which Mr. Boult's paper of November, 1865, which follows here, is a reply; and (3) Dr. Hume's rejoinder. Mr. Boult, however, saw Dr. Hume's Paper as it now stands before he finally dismissed his own for the press.—Ed.]

† Ancient Meols, or some account of the Antiquities found near Dove Point in Cheshire, including a comparison of them with relics of the same kinds respectively, procured elsewhere. London: J. Russell Smith, 1863.

these subjects. The two sections of the book in which this is done, amount jointly to 81 pages:—that which describes briefly the Topography of the district, its Geology, Hydrography, &c., amounting to only about one ninth of the whole. The facts are derived from the best available sources; the authorities are distinctly referred to; and though some of the matter was original, my duty consisted mainly in stating what was known, with fairness, with accuracy, and with distinctness. On the publication of this volume, I hoped that I had done with the subject for ever; and as I am occupied with matters of still greater importance, I dismissed it as far as possible from my mind.

In the spring of the present year, however, attention was again drawn to the subject. A paper, which has since been printed, was read before the Liverpool Polytechnic Society, by Mr. Joseph Boult, who is this year President of the local Society called "Architectural and Archæological." Going formally over part of the ground, which I had trodden somewhat incidentally and in connexion with another subject, he gives us a paper "*On the alleged Submarine Forests "on the shores of the Liverpool Bay and the River "Mersey.*"*

In this paper, the leading thoughts which seem to have suggested the writing of it, are three in number. Two of these are *negative*, and one *positive*. The former are:—

1. That the idea of a Submarine Forest, on either the Lancashire or Cheshire coast, is a delusion; and that the thousands of trees which are recorded as having been visible on the sea margin during more than 200 years, can be accounted for in a much more simple and rational way.

2. That the burial ground said to have been discovered beneath the tide at Leasowe, in 1828, never had an exis-

* *Journal of the Liverpool Polytechnic Society*, 1865, pp. 29-48; Discussion pp. 49-50.

tence; and that though a circumstantial account of it appeared at the time, and an appeal was made publicly to certain prominent men who knew the facts, the whole story was probably a hoax on the part of Mr. Nimmo, the engineer.

The *positive* part of the paper is to the following effect:—

3. That the numerous trunks and roots of trees which have been observed on the sea shore near Leasowe and Formby, did not actually occupy that position during growth. That they are of distant, not of local origin, for that a flood having taken place more than 300 years ago in a little brook on the borders of Salford Hundred, large portions of Chat Moss, to the extent of eighteen or twenty square miles, were carried down into the Mersey; and that the roots, trunks, branches, nuts and turf bog, which we find on these shores, are merely the wreck of that inundation.

He adds, that if there be a submarine grave-yard near Leasowe lighthouse, it is more natural to suppose that the skeletons found are from the uplands of Lancashire;* in other words, that having been floated down on a raft† of turf bog, it found a resting place on the sands to the south of the Rock Channel!

Further,—to account for the different strata of turf bog which occur, with superimposed beds of blue clay or sand, Mr. Boult supposes that there were several such eruptions of water and turf bog from Chat Moss. Also, the greater or less distance between the layers of bog, is naturally

* "On the hypothesis of these deposits of peat being derived, it is within the "limits of *probability*, [possibility?] that the skeletons which suggested the idea "of a burial ground, were also drifted in the peat, or *even that a place of sepulture "was really removed and deposited there.*"—*Boult, Journal of the Pol. Soc. p.* 47.

† "The moss carried into the river would form a species of *raft*, and would "remain compact together, unless torn asunder by violence."—*Boult*, separate paper, p. 23.

accounted for by the longer or shorter period which elapsed betweeen these successive floods.*

Further still,—he thinks that this simple explanation throws important light on the formation of the coal measures in this neighbourhood. Why may not the coal basin have been the recipient of several successive peat beds, floated down from Chat Moss or some similar repository, and regularly placed one over the other ? †

It is somewhat difficult to treat the subject seriously, or to believe that Mr. Boult has not been playing a great practical joke on the members of the Polytechnic Society. At present, however, we regard him as speaking solemnly and in good faith.

The re-investigation of the whole subject having thus been thrown upon me, I have availed myself of the occasion to collect a good deal of local information. Part of it serves to make more plain certain points which were inevitably left in some obscurity when *Ancient Meols* was written; but much of it is only collateral and allied Though in writing this paper my primary object has been to reply to Mr. Boult, it is not unlikely that those who read it will regard this idea as secondary. I shall be glad of this; especially as it has been shown to his own satisfaction and admission, before this goes to press, that he had quite mistaken both the character and extent of the eruption at Chat Moss. Thus, much of his premises and many of his conclusions are already abandoned.

* "If we suppose the top bed (*i.e.* of peat) to have followed the second, after "a comparatively brief interval of time, and that there had been a much larger "interval between the second and first, the cause of the peculiar position of the "peat beds, and of the variations in the thickness of the intervening strata, is "almost self-evident."—*Boult, Journal,* &c., p. 45.

† "If the views I have endeavoured to establish are correct, it appears very "probable that the coal basins themselves were the receptacles for water-borne "peat beds, and that the phenomena of the Mersey and its estuary, offer a simple "solution of the problem the coal formations present. On the supposition of "local growth it is quite impossible such immense masses could be accumulated "in the comparatively brief period allowed by the Mosaic history. If, however, "we suppose them to have lived simultaneously, and to have been deposited "successively, then the long period required by the former hypothesis would not "be required."—*Boult, Journal,* &c., p. 48.

II.—Forests.

In pursuing investigations respecting a former condition of the country, we may either rise from the effect to the cause,—inquiring at each step the reason why,—or we may descend from the cause to the effect, tracing out the resulting facts which are dependent upon and associated with the various phenomena. Each of these courses has its advantages; but for the present I adopt the synthetic instead of the analytic process. Let us look to the Forests, for example, and we shall find them first *above ground*, second *subterranean*, and third *submarine*.

1. *Forests above ground.*

When we remember that Domesday Book assigns only 8500 cultivated acres and 680 inhabitants* to the whole of Lancashire, *inter Ripam et Mersham*,—embracing much more than is known at present as "South Lancashire,"—we wonder how the rest of the county was occupied. We might find an explanation in lands which exist in similar circumstances at this moment, in the United States and other countries of America. The beasts of the field, the fowls of the air and the inhabitants of the marsh enjoyed their little paradise undisturbed by man; but in general, deep silence reigned in the neighbourhood of extensive forests.

If we turn again to Domesday Book, which the labours of the elder Mr. Beamont have made so accessible to scholars, we find that,—though the forests of Lancashire were mostly all in Lonsdale Hundred at the north†,—in a small portion of the Hundred of West Derby there were extensive tracts of the same kind. These are mentioned in connexion with ten townships, viz.: Little Woolton, in the Parish of Child-

* *Beamont's Introduction to his Extension and Translation; Lanc. and Chesh.*, p. ix. In every hundred acres about one acre and twenty-eight perches were under cultivation; and the population was less than 1 in 1500 as compared with the present numbers. If, however, we regard the persons mentioned as heads of families, the disproportion is not so great.

† Chiefly in the large parish of Lancaster.

wall; Roby and Knowsley, in the Parish of Huyton; Kirby, in Walton-on-the-Hill; Melling, Lydiate and Maghull, in Halsall; with Aughton and Lathom on the outside of this curve, and Little Crosby, in Sefton Parish, on the inner side. There was thus a belt of forest, forming with the water almost a complete circle round the modern Liverpool; commencing near the shore of the Mersey on the South, and terminating near Formby channel on the North. It occupied 95 per cent. of the area of the townships within which it stood.

From the same authority we learn that in the Hundred of Newton there was a forest,—or, as Dr. Whittaker supposes, a collection of woods,—ten leagues long and six leagues and two furlongs broad. What was then called the Hundred of Newton has been supposed to be identical with the modern Parishes of Wigan and Winwick; but this must be an error, as a forest even half the size of that mentioned could not find space within their whole area. It is not unlikely, therefore, that the Hundred of Newton* included a greater area, or that these Parishes were formerly much more extensive than now, perhaps running into the modern Hundreds of Salford and Leyland.

Now, as a forest in those days was very different from what we are accustomed to call such; the more limited clumps of trees were not noticed. The smallest portion mentioned is the wood of Little Woolton, which was a square of half-a-league in the side; thus occupying the whole area of the Township, or about 1200 statute acres. If we make allowance for these smaller detached woods, and for the numerous Townships or vills of which no mention is made, we shall be quite within the truth in saying that the entire forest land was at least twice the amount of the woods which are specifically enumerated.

* Within this Hundred of Newton, in the Parish of Winwick, lay till recently a large tract of the territory known as Chat Moss. Several of the remaining fragments of it are now known by special names.

But let us confine ourselves for a moment to the wood in the ten Townships near home. It covered an area of more than 66 square miles, or about 44,000 acres. Let us see how many trees could stand upon this. In many modern plantations a space of 25 square yards is allowed for each tree; but let us make a liberal allowance for vacant spaces and forest glades, by allowing $30\frac{1}{4}$ square yards or a square perch to each. Even with this allowance, more than seven millions of trees could have stood on this limited area; and hence it is morally certain, that more than twenty millions of trees must have spread their leaves to the sun, within the modern Hundred of West Derby alone, at the time that the Domesday survey was made.

Some of these were short-lived; but even the mighty oaks must yield to years, as well as to the powerful agencies of storms, forest fires and other causes, which result in their rotting or the loosening of their roots. It is clear, therefore, that in the lapse of centuries there must have been a large accumulation of vegetable matter; the heavier portions finding a ready bed in the soft marshy ground, and all being soon buried in the rank vegetation of one or two successive Springs.

That the forests in this part of the country did exist for centuries is evident from some of the names, like Simonswood and Toxteth Park, which still survive; and also from a record of the perambulations of the forests at various times. In the twelfth year of Henry III, the Knights who perambulated the forests recommended the disafforesting of the greater part of the county. The exceptions in this Hundred were Toxteth, Derby Forest, and Burton Wood near Warrington. The forest of Wirral, in like manner, existed for about two centuries and a-half; viz.: from the beginning of the twelfth till beyond the middle of the fourteenth century; and the traditions of the inhabitants show that in a district which is now unusually

destitute of wood, the trees were continuous and contiguous from Dove Point to Birkenhead,* from Blacon near Chester to the mouth of the Dee.†

2. *Subterranean Forests.*

Let us next inquire what became of all those trees which were neither consumed by fire, nor devoted to agricultural or domestic uses, nor worked up by the mechanic, and which did not rot by the action of the air, water, or other agencies. We shall find a reply in *Stukeley's Itinerary*, published in 1724; which suggests the next step of the process, and gives us a new term—*subterraneous forest.* He says—

"I shall first take notice of a wonderfull appearance in "nature, all over this country,‡ and which is common to "all such like upon the globe, as far as my informations "reach; that is the infinit quantitys of subterraneous trees "lying three or four feet deep, of vast bulk and different "species, chiefly fir and oak, exceeding hard and black. "Many times the branches reach so near day as to break "their plows."§

Nearly 100 years later, Mr. Greenough, the geologist, gave a similar explanation, especially respecting our own district, where he showed that underlying the surface of the soil there are so many trunks of trees, as to deserve the name of a *subterranean forest.* His map was published nearly half a century ago,‖ when observation was much more limited than

* There is a tradition that "a man might have gone from tree-top to tree-top from the Meols Stocks to Birkenhead." Ormerod's *Cheshire*, i, p. 290.

† "From Blacon point to Hildeburgh-ea
A squirrel might skip from tree to tree."
Pennant's *Tour in Wales*, i, p. 20.

‡ Holland, in the south of Lincolnshire. The same appearances are noticed, (p. 91,) in connexion with the Isle of Axholme, near the mouth of the Humber, and at the north of the shire.

§ A few weeks after this paper was read, an intelligent inhabitant of Cheshire used almost the very words of Stukeley, quite unconsciously. He said the trees were so frequent that branches and trunks were often struck by the plough.

‖ Geological Map of England, 1819.

it has been since; but enough existed even then to give us a correct view of the whole subject. He says—

"There is a *subterranean forest*, extending all the way "along the coast, from the Ribble at Penwortham near "Preston, to the Mersey at Liverpool. The inner line of "this forest takes in Longton Moss and Much Hoole,— "crosses the Douglas, continues by Rufford in a direct line "to Ormskirk, comes near to Melling, passes to Litherland "and terminates at the Mersey opposite to Everton. The "parishes of Penwortham, Much Hoole, Rufford, Halsall, "Altcar and part of Walton stand upon this forest."

It will be observed that this is in the line of the growing wood which we traced out from Domesday, at least so far as the position of the forest is assigned within this hundred.* Mr. Greenough goes on to trace this subterranean forest to Lancaster, along the west bank of the Lune, and at Warton, Cartmel, Furness and Milnethorpe. But it was noticed by the late Mr. Yates in 1843, that Mr. Greenough was wrong in assigning Everton as its southern limit; for crossing the Mersey, it extends itself over a large portion of the Hundred of Wirral, and from the former prevalence of forests in Cheshire, there can be no doubt that it extends over many miles in other parts of the county.†

3. *Extent of Subterranean Forests, and Early Notices of them.*

It may be important to show, principally by the aid of a few quotations, such points as the following:—

1. That the phenomena to which we apply the name "Subterranean Forest," were long known in the form of subterranean trees;—usually preserved in turf bog and connected with it, but not always.

* It does not follow that the subterranean forest is only as old as the Conquest: Roman objects are found from time to time on the upper bed.

† Appendix to Mortimer's *Hundred of Wirral*, p. 22, *n.*

2. That the facts were commonly known three centuries ago.

3. That they are not peculiar to one county; but probably they constituted the rule, their absence in any county being an exception.

Camden tells us* that at Marshland, in the East Riding of *Yorkshire*, "under the turf earth and *other grounds*, from "one to two yards deep, are frequently dug up great quantities "of Fir wood, and some oaks, the wood of the latter very "black. Several roots of trees, some large and standing "upright, others inclining to the east; some of the trees have "been found lying along with their roots fastened, others "seemed as if cut or burnt or broke off from the roots."

Deeping Fen in *Lincoln* was once known as *Kesteven Sylva*,† and there many trunks of trees are found covered by a light black mould. Now there are no trees but willows. As many acorns were found at one place as would fill a hat.

In 1684, a coffin was dug up from a turbary in *Merionethshire*. Camden remarks that they who placed this coffin here might have had regard to the perpetual preservation of it,—"seeing we find by *dayly examples* of trees found in "turbaries."

He also says, that in South *Cheshire*, on the borders of Staffordshire, near the Weaver,—"as in other parts of this "county" they dig up trees which they suppose to have lain there ever since the deluge.

To Chat Moss, Leland assigns fir wood; and Camden‡ says, that some pieces are ninety feet long and twenty inches in diameter throughout. "And 'tis demonstrable" he adds, "that most of our Moss wood is of this kind." One portion of it is called Light-Oaks Moss, as if descriptive of this kind of timber-ground: and Baines corroborates this view, for he

* Gibson's Camden, 775. † *Ib.* 475. ‡ *Ib.* 801.

says that oaks are found, besides birch and fir. The trees lie from west to east, and are charred on the outside, as if burnt down.* On a small estate, which has been recovered from Chat Moss during the present century, about 200,000 trees have been planted. These are all such as survive in a shallow soil, *e.g.*, the black Italian poplar, the Scotch fir, the larch, and fruit trees.†

In Winwick parish, the trees are oak and birch. And in Bryn Moss, which forms part of it, they are split from top to bottom as if by lightning.‡

In the parish of Ormskirk, there are some mosses from which trees are dug ;§ and in Halsall enormous masses of oak are taken from the subterranean forest. Much of it was used about 30 years ago, for house building ; and some of it was sufficiently good to be made into window frames.‖

This last remark reminds us of similar facts at Leasowe. The library at Leasowe Castle is fitted up from the oak of the submarine forest ; and the handles and latches of the doors, in the parsonage at Hoylake, are of the same material.

With these and similar facts before one, it is more than surprising to hear any one express doubts, as to whether the trees grew at the places where they are respectively found.¶

It may be interesting to many to know that underneath a large portion of modern Liverpool, turf-bog, including no doubt the remains of trees, formerly existed. The following

* *History of Lancashire*, iii, p. 131. † *Ib.* p. 134. ‡ *Ib.* iii, 649.
§ *Ib.* iv, 259. ‖ *Ib.* iv, 272.

¶ Similar facts are found in other countries of the world. "A Maori tradition "exists, telling how, in days past, when dense forests covered New Zealand, the "Moas, then very numerous, devoured the Maori children. Wroth, at their "little ones being snapped up, (as an ostrich picks up a nail or an emu a brass "button,) they set fire to the forests, which were consumed, utterly roasting the "Moas in the conflagration. This is their story and they adhere to it. At the "present day, the greater portion of the Middle Island is entirely denuded of "timber. The endless downs, hillocks, and mountains are for a hundred miles "together destitute of a single stick of timber. But *wherever you dig, you come "across great roots and occasionally trunks and limbs,—showing that in past ages, "giant forests have been there.*"—*Illustrated Sydney News*, Dec. 16th, 1865.

catalogue carries us over a period of between three and four centuries. It is slightly in anticipation of a subsequent part of the paper.

In 1328, a charge was laid upon goods entering the town, in order to raise a fund for paving the streets ;—and on every 1,000 turves for burning was levied $\frac{1}{4}$d.*

In 1336, the tax was re-imposed, the amount being the same.†

In 1348, the turbary in the Moss is spoken of.‡

In 1354, the men of Liverpool have authority to dig, dry and carry away turves from the Moss in Toxteth, for their own use.§

In 1394, it is said that the turbary in Toxteth Park consists of one parcel.‖

In 1444, the Old Mosse in Liverpool is spoken of; and the profits of the turbary are said to belong to the king.¶

In 1641, Smith-downe Mosse is spoken of.

In 1658, the Town boundary is said to run by the Mosse, between two lakes.

In 1671, the Mosslake is spoken of in the perambulation of the town.**

In connexion with this subject, it would be interesting to know the opinion of John Leland himself. He lived while green woods still flourished, when marshes and morasses were undrained, when bogs and moors were unreclaimed. Did he believe in *subterranean* forests scattered over many of our shires ;—or did he know anything of land sinking within the

* Patent Roll, 2 Ed. iii, part 1, mem. 34. † *Ib.* 10 Ed. iii, part 1, mem. 33.

‡ "The bailiffs there answer for one penny from the burgesses of the town of "Liverpool, for twelve acres of turbary in the Moss, in exchange for one plot "within the park ; . . . . 7s. 3¾d. the rent of fourteen acres and a half "and half a rood of turbary in the Moss." *Report of Local Charges on Shipping*, p. 426.

§ "Together with the parcels of turbary beneath our park of Toxteth . . . "so that they may dig in the said parcels turves for their own fuel and dig and "carry away the same at their will." *Report of Local Charges on Shipping*, p. 426.

‖ *Ib.* p. 427. ¶ *Ib.* p. 429. ** *Ib.* p. 271

embraces of Neptune? I think I can show that he did; and I propose to cross-examine Mr. Boult's own witness, the dead of more than 300 years; and to show that his testimony is on my side.

In reference to this County, he says, "Al *Amoundernesse* "for the most parte, in time past hath beene ful of wood, and "many of the Moores replenished with hy Firre Trees. But "now such part of *Aundernesse* as is toward the Se is sore "destitute of woode.*"

"*Lydiate* Mosses, in the right syde wherof, my Gide said "that ther were Rootes of Fyrre wood."†

Of a portion of South Wales, the following account is given:—

"*Strateflure* is set round about with Montanes not far "distant, except on the West Parte wher *Diffrin Dyue* is. "Many Hilles therabout hath bene well woodid, as evidently "by old Rotes apperith, but [now in them is almost no "woode.‡]"

"The Causses be these, Firste the wood cut down was "never copised, and this hath beene a great cause of the "destruction of wood through *Wales*. Secondly, after cutting "down of wooddys, the Gottys hath so bytten the young "Spring that it never grew but like Shrubbes. Thirdly, men "for the nonys destroied the great wooddis that thei should "not harbour Theves."

"Ther be founde in Marisch and Mossy Ground, a vii "Miles from Shrobbesbyre, and in other Places of the Shire, "Fyrwoode Rootes, and also the hole Trees hewen downe in "olde-time, but of whom, or for what cause no Man there can "telle. They fynde them lying yn the Grounde, sumtime "a Foote or ii depe, sumtime a v or vi Foote depe. Many "of them be of a greate Lengthe, and without Twyxse. Yn "brennyng they smel well."§

"*Cholmeley* dwellith at *Cholmeley* Haul, a fair Howse, "having a little Mere by hit, a fair woode, and a Mosse of "Fyr wood. It is in the Middes of the way betwixt *Malpas* "and *Bunbyri*, iii Miles from eche."‖

"From *Blakemere* to *Byklem* in a Fosse, iii Miles of Sand,

* Leland's *Itinerary*, vol. v, p. 81. [Hearne's 3rd Edition of 1769.]
† *Ib.* v, p. 79. ‡ *Ib.* v, p. 76. § *Ib.* vii, p. 21. ‖ *Ib.* vii, p. 30.

" hard by *Cholmeley*, first I sawe the great numbre of [Firre " Trees] the wich the Inhabitantes communely dig up for " Fier wood, but ther did I se no Fyrre Trees growing. " Oftentimes in diggin in this Mosse, or More, for Petes or " Turves, they finde the hole Trees of the first, sum short and " sum veri long, without Twicke or Bow, lying sumtime not " a Foote, sumtyme iii or iv Foote deepe in the Ground, " but how or when these trees cum doune other be Cutting " or wind Faulle, no Manne ther can telle. The wood of " them in burning savorith of Resine."*

" Suche Firre Trees overthrowne and coverid with Bogge " and Mersche, as be in *Chestershire, Lancastershire* and " *Shrobbeshire,* be found in some places of the Isle of " *Oxolme.*"

From this it is perfectly clear that Leland knew of the subterranean forests; that he was aware of thousands of fir trees overthrown he knew not how; but when on the ground they were covered, as he says, " with Bogge and Mersche." Also, though we know how common the facts are, he had noticed them specially in Cheshire, Shropshire and Lancashire.

4. *Submarine Forests.*

From this subject, the transition to *submarine* forests is easy. We do not mean, of course, that trees or portions of them grew under the water;—though Camden in his ignorance of facts of this kind, thinks it possible that some have grown under the land. Nor will it do to assign the Deluge,†—that last resort of ignorance,—as the cause of all phenomena extending beyond the limits of our own experience.

The fact simply is that the sub*marine* forest is the edge or termination of the sub*terranean* forest; that it is part of a stratum of trees and turf-bog extending far beneath the land;

* Leland's *Itinerary*, vol. v, p. 74.

† . . . . . " Great Chatmosse at my fall,
Lyes full of Turfe and Marle, her unctuous Minerall,
And Blocks as blacke as Pitche (with boring Augurs found,)
There at the generall Flood supposed to be drown'd."

Drayton.

that the trees occupy the spot where they grew; and that a small portion has been denuded and exposed by the action of adjoining water. Where the beds which have supported this black earth have been wholly or partially washed away, it sinks; and thus the stems, stumps and roots appear below high water mark.

It is clear that the whole question of sub*marine* forests depends on the previous one of sub*terranean* forests; for, if we can show that the same stratum extends beneath the land for perhaps hundreds of square miles, the exhibition of a portion of it, where it comes in contact with the tide, ceases to be remarkable. Though the name sub*marine* forest is somewhat open to objection, the facts on which we rely hardly admit of doubt. If the trees at the water's edge, in a bed which is continuous with that under the surface of the soil, did not grow where they are found, what right have we to suppose that the subterranean forests grew where they are found? And if they are of distant origin, where did they come from, and how were they placed there?

Thus, by a *reductio ad absurdum* we reach the following conclusions, which I have illustrated at large elsewhere.

1. That of the millions of forest trees which existed before the Conquest, at that date, and subsequently, a large proportion sunk into the earth, forming in part the black stratum of vegetable matter such as underlies much of South Lancashire.

2. That the sea has at various times exposed large portions of this black stratum, disintegrating and dispersing them; and that while they are so exposed, and dip beneath the tide, they are known as Submarine Forests.

3. That owing to the existence of such a stratum of black earth or sub*terranean* forest, in both Lancashire and Cheshire;—such sub*marine* forests have been at various times visible on these shores.

4. It can be shown that several sections have been exposed

at various times and subsequently carried away;—and that no portion remains long in the same condition.

That the submarine and subterranean are continuous, is evident from such facts as the following. Even within the estuary of the Mersey, particularly at Knott's hole, there might be seen in 1843, and perhaps may be seen at this day, trunks of trees of the usual description; and a little higher up "beds of peat dipping into the river, which, under the "action of high tides and rapid freshes in the rainy season, "have suffered much diminution."*

Mr. Baines also noticed, from thirty to forty years ago, that between Liverpool and Preston might be seen on the sands at low water, the roots and trunks of trees, the remains of ancient forests;—"these extend also inland, under the surface "of the country, nearly on a level with the present low water "mark." He mentions also that Dr. Alderson had noticed a similar occurrence, round the coast of Holderness and Lincolnshire.†

In describing the parish of Hesketh-with-Becconsall, which lies beyond Southport in the Hundred of Leyland, the same facts are noted. It should be stated that the parish consists in a great degree of moss; and that it adjoins the cut by which Martin Mere was drained. He says "for many ages "the remains of the *subterraneous* forest were exhibited on "this coast by trunks of trees, which became visible on the "reflux of each successive tide, but they have now all "disappeared."‡

In the neighbourhood of Formby, a few miles to the south of Hesketh, where there was an extensive moss in the seventeenth century, the trunks of trees remained till our own time; —but as the inroads of the sea are now prevented as much as possible, and as the drifting sand has covered much that

* Appendix to Mortimer's *Hundred of Wirral*, p. 23.

† *History of Lancashire*, ii, 88. ‡ *Ib.* iv, 439.

remained, these appearances have gradually become more rare.

In the year 1815, there were many hundreds of trees and stumps at Seaforth, which lies within the mouth of the Mersey. These formed part, no doubt, of the turf bed, six feet deep, recently exposed near Rimrose Brook. They were all washed away* years ago; so that time alone furnishes a reply to much that has been advanced. A square mile of turf bog would not withstand the force of the tides during a single winter.

Farther, there is a portion of the submarine forest being uncovered, and showing the process of its exposure, at this moment near the mouth of the Alt. Three or four years ago, the surface was of firm sand, so that wheel carriages passed over it with facility; now, the sand is washed away, and the subjacent turf bog is exposed.

On the Cheshire side of the Mersey, as is well known, the stratum of black earth, or the subterranean forest, extends over most of the wide flat in which Bidston Hill stands like a peninsula. Mr. Urmson, the keeper of the lighthouse, whose personal and family traditions are both the most interesting and most trustworthy in all that part of the country, tells me that turf was cut for fuel, at Park Lane near Leasowe lighthouse, till about the beginning of the present century. About 1765, just a hundred years ago, the country people used to assemble and catch eels in the bog holes,† and carry them in tubs to Liverpool to be exchanged for flour. This fact reminds one of two places about midway between Crosby and

* While the shore at Seaforth was being washed away, a curious phenomenon occurred. The extremity of a paved roadway was undermined, but as the stones adhered together, it projected out like the end of a plank, and remained so for some weeks. At length the cohesion gave way. For some of this information I am indebted to the Rev. W. Rawson of Seaforth.

† During the month of October, 1865, the process of spearing for eels was going on in the Birket, while a working man was explaining to me that in one place the bog was fifteen feet deep.

Hightown railway stations, viz.: the Old Sniggery and the New Sniggery; "snig" being the Lancashire term for eel, and these evidently being the pools from which a supply was drawn.

If we turn to the beautiful map of Cheshire by Swire and Hutchins, the surveys for which were made in 1828 and 1829, we find no Bidston *Marsh*, but in its stead Bidston *Moss;* * and on the Ordnance Survey map, executed about twenty years ago, there is a return to the same nomenclature. Mr. Mortimer says that the subterranean forest trees are found all the way along the course of the Birken rivulet, from Newton Car to Wallasea Pool;† but he is wrong in seeming to say that they are limited to that line.

But let us go a little further. In Leigh's *Natural History of Lancashire*, 1700, it is stated that in Martin Mere the fir, birch, ash and oak are all in separate positions; as if forming distinct and classified forests; and Dr. Aikin says that a part of the trunks which were standing near the mouth of the river Alt, "being in a line at equal distances, were undoubtedly "planted."‡ Also in March, 1850, I reckoned so many as 538 stumps on the Cheshire coast; the smaller ones were together as if recently planted by a farmer of the neighbourhood, and they were in rows five yards apart. Numerous other facts of the same kind could be adduced.

It is very curious that Mr. Boult has avoided alluding to some of these facts, while he has quoted in minute detail unimportant and irrelevant matters.

In December, 1827, Mr. Kaye, of the *Liverpool Courier* office, visited the Cheshire coast; and he reports that many young men informed him of having recently seen the roots

* In the autumn of 1865, during the construction of the Hoylake Railway, the material cut away was used as fuel by the families of the labourers in the Dock Cottages.

† *Hundred of Wirral*, p. 138.

‡ *History of the Country round Manchester*, p. 327.

and trunks of large oaks, more than 200 yards below the point of high water mark, lying amongst the "black braes," or hillocks of peat.

On the 8th of March, 1828, Mr. Stevenson read a paper before the Wernerian Society of Edinburgh, on *The Wasting Effects of the Sea on the Coast of Cheshire, between the Rivers Mersey and Dee.* The following remarks on the subject occur in it:—

"This beach, at about half-tide level, presents a curious "and highly interesting spectacle of the remains of a "*submarine forest.* The numerous roots of trees which "have not been washed away by the sea, or carried off by "the neighbouring inhabitants for firewood, are in a very "decayed state. The trees seem to have been cut off about "two feet from the ground, after the usual practice in "felling timber; and the roots are seen ramifying from "their respective stumps in all directions, and dipping "towards the clay subsoil. They seem to have varied in "size from 13 inches to 30 inches in diameter, and when "cut with a knife appear to be oak. Several of the "boles or trunks have also been left upon the ground, and, "being partly immersed in the sand and clay, are in a de-"composed state."

Mr. Boult, after a careful perusal of this passage, has suppressed it also.

Let us go back, however, for 240 years, to a time when Neptune made his aggressions on the coast without challenge, and we shall find not merely that the land and sea forests are spoken of together, but some idea is given us of the *subterranean* forest in its prime. In James's *Iter Lancastrense*, 1636, he refers us to a place called "Ye Stocks in Worold," taking its name from these very stumps; and which till recently was known by the cognate term "Meols Stocks," derived not from the hundred but the township. He says—

But greater wonder calls me hence: ye deepe
Lowe spongie mosses yet remembrance keepe
Of Noah's flood: on numbers infinite
Of fir trees swains doe in their cesses light;
And in summe places, when ye sea doth bate
Down from ye shoare, 'tis wonder to relate
How *many thowsands* of theis trees now stand
Black broken on their roots, which once drie land
Did cover, whence turfs Neptune yeelds to showe
He did not always to theis borders flow.

Here there is not the slightest allusion to a flood, either apochryhal or actual, from Chat Moss or any place else. The simple explanation is that the trees are found in the recesses of the bogs as well as under the sea, and that the sea flows where it did not flow before; yet the writer lived 230 years nearer to the time of the alleged eruption from Chat Moss than Mr. Boult does.

Mr. Stevenson further says that the roots of the trees sought the subsoil below; and Mr. Boult, knowing the fact, argues that such is not the case; declares that he himself has seen no such thing; and quibbles about Mr. Morton's term "rootlets," as if it indicated something distinct from roots.

Camden, who flourished about the same period as James, but who was less familiar with the facts of this locality, notices the existence of submarine forests elsewhere, so that they must not be considered as *unique* in this part of the country. He says of Bulness in Cumberland, near the Solway,—"that the figure of the coast hereabout hath been "altered, appears plainly from roots of trees covered with "sand, a good distance from the shore." A similar fact is discernible in our own day, off St. Bees' Head in the same county, where numerous roots of trees are visible, far out at sea, during low water of spring tides.

Even Leland knew of the facts which produce submarine forests, for he mentions something much beyond the mere exposure of a turf stratum, viz., the loss of large sections of a shore. He says, "Wher now the wilde Se is at the mouth

" of the Dewy, and farther into the Se, were ons 2 Commotes " of good plentiful but low Ground, caullid *Cantre Gwaylode*, " *i.e., terra demissa, vel subsidens planitie,* now cleane eaten " away."* The historical facts as stated by several modern writers, are of great interest.

The sum of this portion is, that the existence of a submarine forest on the shores of Liverpool Bay is not a matter of doubt or speculation. For, (1) it has been a fact long generally recognised; (2) it is open to observation at this moment; (3) it has never been for more than 200 years questioned by any one who understood the subject; and (4) its nature, extent and causes are well known. Q. E. D.

III. Mosses.

Allied with these forests are mosses or turf bogs, which require some special remarks; for not a few of the erroneous statements which have recently been made have arisen from want of acquaintance with this subject. So large a mass of vegetable matter as we sometimes find, suggests the idea that there were formerly causes in operation which do not now exist; but a brief examination suffices to show that such was not the case. The circumstances connected with the surface of the ground, however, are different from what they were during the lapse of former ages.

Owing to the peculiar physical formation of Ireland,—with frequent mountains and hills near the coast, and plains or hollows towards the centre,—there is a much larger area of peat there than in either England or Scotland. Every fact connected with it is familiarly known to all classes of the community; yet, as in the case of England and Scotland, it is fast diminishing. Many names of places in all the three countries show that mosses were formerly much more common than they are at present.

* *Itinerary*, vol. v, p. 36.

The mode of formation of peat moss has been carefully investigated by several scholars and observers, in particular by Sir Richard Griffith, Bart., and the late Mr. Nimmo; to the latter of whom we shall have occasion again to allude. The conclusions at which they arrived may be summarised in a few paragraphs, from a publication of great value, the first volume issued by the Directors of the Ordnance Survey.*

1. The plant called *sphagnum* forms a large part of the material of peat moss; superabundant moisture being the inciting cause.

2. Bogs are frequently found in basins like lakes; and the basins may be formed in various ways. Sometimes diluvium accumulates at the mouth of a river;—or a bank of sand or gravel is formed at one end of a valley or hollow, by a passing stream; or the natural clay forms a sort of puddle serving to retain the moisture.

3. The aquatic plants creep gradually in from the margin towards the centre; mud is accumulated round their roots and stalks; and in the semi-fluid mass so formed, the *sphagnum* begins to luxuriate.

4. The exhaustion of the water for the support of numerous vegetables on the one hand, and the solid accumulations from their decay, on the other, in time change the pool into a marsh, or quagmire, or "blind lake"; and afterwards it becomes quite solid.

5. In favourable circumstances, the growth of bog is two inches per annum; but in general it is not so much. This is condensed to about one-eighth; so that an average period of more than fifty years would be requisite for the growth of a foot of bog.†

6. In mountainous districts, the moisture is furnished by the clouds and mists: but the general facts are the same.

7. As a rule, *oak trees do not grow in bog;* but their roots

* *Ordnance Survey of the County of Londonderry*, vol. I, 1837, pp. 7–9.

† In the extensive works at Derrylea, in the County of Kildare, for compressing peat for the purpose of fuel, a ton is reduced from an average volume of 168 cubic feet to that of only 41, or less than a fourth. In this form, its heating power is about 60 per cent. as compared with Wigan or Whitehaven coal. Nearly 100 tons are manufactured weekly; but with extended machinery the amount might be greatly increased.

penetrate the substratum on which it rests. In certain cases, however, as when it is deep and hard, they have been known to grow in it.

8. Firs, especially the kind known as the Scotch fir, grow in the bog itself; and they are frequently found with both roots and stems at greater elevation than those of the oak.

9. Where there has been a hillock or natural elevation at the bottom of the bog, oaks are often found to have grown; and in such circumstances they now lie above the firs which originally stood on a lower level.

10. There are certain trees which are destroyed by the growth of peat. In 1798 a birch plantation in Ross-shire, belonging to Sir George Mackenzie, Bart., gradually decayed as the peat grew, and finally all the trees died and were buried in the peat.

11. As the growth of bog takes place from the shallower to the deeper portions of pools, trees may have often fallen into the water; and thus other members of a contemporaneous growth sometimes appear to have sprung up subsequently and over them.

12. The lower stumps are generally more ragged; and the higher frequently project above the surface.

Now, if we look to the wide expanse of flat land north of the Mersey, appearing as if it had only recently emerged from the sea, we notice a district likely to abound in turf bog. Even before being told that it contains a subterranean forest, we should be able to predict some of the facts; as it has abounded in marshes. The drainage is still effected with difficulty, and it is intersected by deep cuts and straight lines of road, such as one sees in Huntingdon and Cambridge shires, and especially in the Isle of Ely.

Without turning to any of the earlier writers, as Camden, Webb, Speed, King, Gough, let us examine an ordinary map. The Ordnance map of Lancashire was engraved between 1842 and 1848, and the smaller one, or that on the scale of an inch to the mile, exhibits 124 mosses upon its surface, *i.e.* places to which the name is applied. In a few instances,

where a moss has lain across a township or parish boundary, the remaining fragments are called by the names of the two localities. The mosses may thus appear occasionally to be rather more numerous than they are; but on the contrary, in many other cases, the term "moss" has been dropped, as the peat disappeared.

The term *moss* is also connected in geographical terminology, with nine or ten other words,—such as *bank, farm, hall, house, lane, ley, nook, side, wood* &c.; several of which names occur,—sometimes three or four,—in connexion with one moss. For example, Moss-side, Moss-lane, Moss-houses &c. Let us assume that the average occurrence of such terms is three and a quarter times for each actual moss, and we shall have more than 400 names of places in which the term "Moss" occurs as a component part.

For reasons which have been assigned, the term *forest* is of most frequent occurrence in the north and east of the county; but there are other words which are related in their origin to both Moss and Forest. If we add *moor, heath, marsh, green, firs* &c.,—all connected with the same class of surface,—the 400 names of places become probably 1,000, all illustrative of a former condition of the country.

Let us return, however, to the places which are still called "Moss." There are 124 in the county; but in an area embracing one-third of it, including the whole of the Hundred of West Derby, there are sixty-six of these, or fifty-two per cent. In other words, such names occur twice as frequently in a part of the area, *inter Ripam et Mersham,* as elsewhere. And if we examine more minutely, looking not only to the existence of the name but to the extent of ground covered by moss; we shall find that about two-thirds* of all the material

* Thirty years ago, Chat Moss alone contained nearly a third of the turf-bog in the whole county; or 6,000 acres out of 20,000.—Baines's *Hist. Lanc.*, iii, 131.

turf bog of the county is found within this limit. In other words, it is four times as abundant here, as in the other parts of the county on the average.

It is only necessary to add that many of these names are transitional, or destined to pass away, when the condition of the country becomes altered; and that not a few of them are obsolescent, or fading even now. The Moss-lake and Moss-lake Fields, formerly within the Parish of Liverpool have long disappeared from our maps, and the area from the Crown Street railway station to Abercromby Square occupies their place; just as the Great Heath on which the inhabitants used to dry their clothes after washing day, has long given place to St. John's Church and churchyard, under the morning shadow of St. George's Hall. The same fate has happened to the great turbary in Toxteth, from which the people of Liverpool cut, dried and carried away turf.

It may be interesting to show the prevalence of moss and marsh lands in this neighbourhood, nearly three centuries ago, in confirmation of these remarks. In the thirty-fourth year of Elizabeth's reign, Richard Blundell of Crosby held, with other possessions, the following lands*—

1,000	acres of	Land
200	,,	Meadow
1,000	,,	Pasture
400	,,	Woodland
500	,,	Heath and Ling
500	,,	Marsh
500	,,	Turbary
500	,,	Moss-land

These may be divided into four nearly equal parts; viz.:— one of land under cultivation, one of pasture, one of moss and turbary, and one of marsh, heath and woods. In other

* Baines's *Hist. Lanc.*, iv, 216.

words, on one of the finest estates at present in the shire, one half at least was wholly unprofitable for the purposes of either the farmer or the grazier, at the close of the reign of Queen Elizabeth.

Before leaving this subject let us pause and examine Mr. Boult's remarks on peat moss or turf bog.

1. His theory of their formation. Fallen trees become jammed between the banks of a stream and form a natural dam; other trees accumulate, and the growth of *sphagnum* does the rest (p. 21.) Such facts no doubt occur, but this theory is very different from that of Griffith and Nimmo just given.

2. Almost at the very outset, Mr. Boult says that I regard recent and repeated *subsidences of the land** as proved by the deposit and superposition of peat beds. It will be seen that I account for the existence of these beds on totally different grounds; but partial subsidences, in consequence of the action of the sea, are undeniable. There may have been an extensive sinking of the land at some remote period; but we are now treating of modern times: Mr. Boult, therefore, attributes an opinion not actually held, and conveniently puts it aside.

3. He says that no greater thickness is assigned to any of the peat beds than three feet! Within a mile of Wallasea Pool we show him a bed twelve or thirteen, and at one place fifteen feet thick.

4. He has never seen the tree roots penetrating to the bed below the moss. Perhaps not, but hundreds of others have seen them; and except in the case of fir trees, that is their natural position.

* On the 12th of March, 1866, Mr. Boult explained at the Polytechnic Society, that by his expression "local subsidences in the earth's crust," he meant nothing more than the sinking of the turf bog when the sea has swept the sand from under it. On this I remark as follows. (1) No sensible reader of his paper could draw such an inference; (2) in *Ancient Meols*, on which he commented, attention is drawn to the distinction between a subsidence of the earth over an area, and a mechanical sinking at the margin; (3) this distinction has been kept up throughout; (4) in three previous discussions, extending over six months, he never hinted that his expression was misunderstood, nor did he with the proof slips of this paper before him; and (5) if he did not mean what was supposed, his explanation of repeated turf strata from Chat Moss, with layers of other earth between them, becomes absurd.

5. He argues, how can gigantic trees grow in a thin stratum of three feet? The reply is, that this is a double fallacy of his own making. (1) They did not grow in it, and (2) the thickness was more than three feet.

6. Again, he argues that moss tends to destroy the trees instead of nourishing them. This is true, as we have seen, of some;—but it is not true respecting fir and oak.

In short, Mr. Boult's facts are almost as often at variance with experience as in accordance with it; and when he does get hold of one, whether genuine or spurious, he uses it either to support a proposition or to destroy it.

IV. Sands.

Another important agent on these coasts is sand, which is abundant along the whole shore of Lancashire and Cheshire. One of the earliest to describe it in detail is James, in his *Iter Lancastrense* already quoted. He says—

> Ormeschurch and ye Meales
> Are our next journey, we direct no weales
> Of state to hinder our delight. Ye guize
> Of those chaffe sands which doe in mountains rise
> On shore 'tis pleasure to behould, which Hoes
> Are called in Worold: windie tempest blows
> Them up in heapes.*

The district is represented by the poet as unproductive and deserted. He and his companions found only one old man engaged in fishing, who had been a sailor when Essex took Cadiz in 1596. He was as solitary as Thomas Bushell the hermit, who lived and died at the Calf of Man in the beginning of the seventeenth century.†

The place is still called *Meols* with the prefix "North;" but the latter is comparatively modern. The site of the modern Southport was South Hawes in the beginning of the

* Cheetham Society's edition, p. 4. † *Ib.* Notes.

present century; and *North* Meols merely refers to a different part of the sandhills,* lying about Church-town.†

It must not be supposed that such phenomena are peculiar to our neighbourhood;—on the contrary, we have only an example of facts both general and well known. There are the Dunes near Dunkirk in France; both words being derived from another term for hill.‡ There are sea coasts of a similar kind in both North and South America; in Australia; in the Polar Seas;§ and, with some curious resemblances and contrasts, in Africa. For example, north of Cape Verd there are long ranges of low sandhills; and they preserve from the incursions of the sea, land which is much below the level of high water. Phœnician anchors have been found in villages bordering the desert, and not a few inland localities retain in Arabic the names of seaports. Sir Sydney Smith, the hero of Acre, entertained a project for letting the sea in upon these low lands of the Sahara, with the twofold purpose of aiding commerce and modifying the heat of the climate.‖ Some of the cavities of the desert, however, are merely circular basins, the origin of which appears to be unknown.¶

* The term *Hoe* means a hill; and it is still a popular term in provincial districts.—*Dickinson's Cumberland Words.* There is the *Hoe* or *Haw* at Plymouth; Clitheroe [*i.e.*, Calder-*hoe*] in Lancashire; Tor-pen-*how* in Cumberland; &c. The South *Hawes*, noticed in the text, simply meant the South Hills; and there is still in the parish the place *Hawes* Houses. On Grenville Collins's map is marked the *Hoes'* End, where the sand hills terminated near Leasowe; and we still have the *Hoes'* Side farm near New Brighton, and the *Hoes'* Side in the suburbs of Southport. The township of *Hoose*, at Hoylake, and the *Horse* Channel opposite, are evidently named from the "hoes." *Meols* means bald, viz., the naked hill. Hence, in districts of the same character, we have North *Meols* and Ravens*meols* in Lancashire, and Great and Little *Meols* in Cheshire. The sand is thus the cause of about twelve local names; and they are a history of the facts for centuries.

† The Kirk-by or place of the Church.

‡ There is also a place called the Duans, at Great Meols in Cheshire.

§ "Up to Kostin Shar, [Nova Zembla,] the coast has white sandhills; and "the bottom of the sea is white sand: but further to the eastward, the coast is "like that of Norway,—bold high land."—Captain Jansen of the Dutch Navy, in *Proceedings of the Royal Geographical Society*, ix, 172.

‖ *Chambre's Recollections*, I, 302, quoted in the *Correspondent*, p. 104.

¶ "Their great size secures them against filling up. The pit in which we "passed that night could not have measured much less than a quarter of a mile "in its upper diameter from rim to rim, and its depth was certainly about 800 "feet. . . . They are capricious pits, dug out by nature from time to time "in these dreary wastes, and hollowed with an exactness of circular form truly "surprising."—*Palgrave, Central and Eastern Arabia.*

In Egypt, two natural agencies are perpetually opposed; and each in turn gains upon the other. The sand, at one season, diminishes the already narrow ribbon of cultivation; and the Nile, at another, recovers the lost territory, by covering it with water and mud. So, in like manner, we have a perpetual contest here. Nature threatens to destroy cultivation by a slow but sure ingress of sand from the sea;—Art, on the other hand, has discovered the remedy, and the star grass not only arrests further injury, but restores to the farmer the portions remote from the sea. It was introduced about 1744, and the planting of it made compulsory by Act of Parliament. At Formby in Lancashire and Great and Little Meols in Cheshire, it was until recently imperative on the country people to plant and attend to it on certain days of the year. The same arrangement probably still exists.

About 1690, there was a deep channel close to the shore at Formby; and then there were no sand hills threatening to obliterate cultivation at that point. But when the channel closed, by the bank approaching the shore and becoming permanently attached to it, a broad belt of land adjoining the shore, was reduced to the condition of a desert. In like manner, there was a deep channel at the Hyle lake in 1690, but that has since become filled up, and the tendency of the hoes or hillocks of sand has been to encroach upon the land.

For the last seventy or eighty years, farms have been sanded up or "blown out" from time to time in the neighbourhood of Formby; and the country people have gradually retired. One place on the south border of Birkdale, still preserves the name of "The Lost Farm." It was "blown "out" about half a century ago.* There has been less of this in Cheshire, though large portions of the land have been removed; because until lately cultivation was rare near the shore, and most of the land was unenclosed common.

* Baines's *Hist. Lanc.*, iv, 281.

If we look to some of the earlier maps, showing Liverpool and the adjacent coast, the prevalence of sand is every where observable. Thus on the Herald's map of 1565,*—exactly 300 years ago,—in which Toxteth Park and Bank Hall are much more important than Liverpool, there is a belt of sand shown from above Garston on the Lancashire side of the river to the mouth of the Alt. The same class of shore is shown in the map of "Liverpole" by B. De Gomme, 1644, in which nothing is given of the town but the Church of St. Nicholas, the Castle, the Walls, the Cross near the site of the present Town Hall, and the lines of street or road, both within and without the fortifications. And it is probably from some traditions on this subject that the late Mr. Harding represented the sand hills as commencing almost at the north side of St. Nicholas's Church. Certain it is that they commenced within the Borough, and almost within the Parish; for the residence of the late John Leigh, Esq., where St. Aidan's Church now stands, and which is soon to become the site of a dock, was called "Sandhills." Hence the Sandhills railway station, near the North Docks, derived its name. From this point, the line of hills passes on with few interruptions to the northern limit of the Hundred of West Derby; and a coast possessing the same general characteristics extends past the mouths of the Ribble and Lune, to that part of the county significantly known as Lancashire "beyond "the sands."

Persons of limited information are in the habit of speaking of these blowing sands as if they were unknown elsewhere; or as if the facts with which we are familiar were almost or altogether unique. This is by no means the case. In the north of Scotland, where the County of Elgin adjoins that of Nairn, an entire estate was buried by the drifting sand, about 200 years ago. It was the property of the Kinnairds of Culbin, and consisted of a rich loamy soil like much of the

* A bad fac-simile of this is given in *Gregson's Fragments.*

land in this neigbourhood. It was regarded as the "girnel" or granary of Moray, producing rich crops, and exhibiting what are somewhat rare in Scotland, beautiful orchards. It is now totally destroyed,*—a desolate waste. The star grass appears to have been less in use there than in Lancashire and Cheshire, for the sand hills are represented as being in almost perpetual motion. The rapidity† and peculiarity of their changes are very remarkable.

The following facts are of much interest, as illustrating a similar state of things in our own neighbourhood ; and they are a rebuke to the scepticism of those who have regarded such occurrences as impossible, the simple fact being that they themselves have not observed them.

* New Statistical Account of Scotland, vol. xiii; Lecture by Mr. Martin,—*Banffshire Journal*, May 14th, 1863.

† *Loss of a Ship's Cargo.*—In the days of smuggling, a foreign cargo of contraband goods was landed by night on the shore. They were stored away temporarily, under the slope of one of the large hills, till the country people could arrive with carts to remove them; but a wind sprung up in the night, and continued during part of the next day. In the evening, when the carts arrived, the cargo was no where to be seen; and the appearance of the hills was so completely altered that its site could not be identified. An extended and careful search was made, and no doubt it has often been renewed since ; but to this hour neither brandy nor tobacco has been discovered. . . . *A Sand Storm.*—The following extract reads like a passage from travels in Northern Africa. "The sand seemed to come in waves, which had a sensible weight, and the force "with which they were driven made it somewhat difficult to withstand them. I "was more than once like to be carried off my feet. On approaching the last "great sand hill, the wind poured down through the hollow as if it had been "blowing through a funnel. The quantity of sand drifted along must have been "immense. I caught it in handfuls as it passed. When nearing the gorge, the "wind had acquired a rotatory motion; and the sand, following the movement, "drifted about and lashed me at times with some severity—as if it was done "intentionally and for a purpose." . . . . *Drowned in Sand.*—"I felt a "pressure and weight on my body, which had the effect of dragging me down "and retarding my progress, as if the power of gravitation had been increased "ten-fold. Certain dubious thoughts flashed quickly across the mind, and for a "moment I felt like one petrified. At the same time I felt a burst of perspiration "starting from every pore, and in less than a minute my whole body was suffused "with moisture. In the midst of my perplexity, I put my hand into my pocket, "in search of my handkerchief to wipe away the big drops which trickled down "my face,—I found my pocket crammed with sand. Every pocket about me was "filled with sand; my clothes were completely saturated with it; my shoes were "like to burst; and my eyes, my ears, my nostrils, and my mouth, were all par-"takers of it more or less. On moving about, I observed the minute particles of "sand pouring from my clothes, as thick as when a drizzling rain falls from a "summer cloud."—*Mr. Martin's Lecture.*

North of Scotland.

1. The cultivated land has been discovered, when the super-imposed sand hills have been blown aside. "Instead "of a series of sea beaches, "you see before you a large "tract of the old fertile lands "of Culbin. . . . . "On this rich loamy field, the "husbandman had no doubt "driven his team with a merry "heart, and in due time reaped "a plentiful harvest."*

2. There was a church on the borders of the estate, but it has long disappeared. Its site is still known as the Chapel Hill.†

3. Great numbers of shells of oysters and other edible sea fish are found, in many instances mixed up with peat ashes, and other tokens of human habitation.

4. About the year 1820, part of an old house was found. The walls were formed of neatly cut sods, held together by wooden supports;

Coast of Lancashire and Cheshire.

1. Where the sand hills at Leasowe have been slightly cleared off from the land on which they stand, ridges or "butts" of cultivated land are visible. They were noticed in 1828, as part of the discoveries made by Mr. Nimmo; and I have myself seen them. The country people speak of such appearances as common occurrences.

2. From 1746 till 1859 a pathway through sand hills at Formby was known as Church Street, though it led to no church. It had formerly led, however, to the old church of the village which is now extinct. In like manner, on the Cheshire coast, the pathway to Lee's Kirk, now beneath the tide, was known as the Kirk way in the beginning of last century.

3. Numerous tokens of human habitation, but generally of a different kind, have been found near the site of Ancient Meols, and some near Formby.

4. The remains of the old lighthouse, to seaward, have been seen by several persons now alive. The remains of an artificial plantation may yet

* Mr. Martin's Lecture. † *Ib.*

1407094

and the floor was formed of round water-worn stones covered with clay.

be seen below the tide near Hoylake. The remains of the residence of the Family of Meols, were visible a few years ago. It is supposed to have been one of the old half-timbered houses of Cheshire, resting on brickwork.* I have myself found water-worn paving stones, at the seaward base of a sand hill, apparently the remains of a farm-yard.

5. About the year 1780, a storm, which raged for several days, uncovered a portion of the ancient mansion, which appeared to have been firmly built of dressed stones. Many of these were removed by the country people for building purposes; but it was again buried in a storm, and nothing has been seen of it but a single chimney top on one subsequent occasion.

5. The materials of Meols Hall are partly used up in a neighbouring farm house. Among the sand hills may yet be seen portions of the old curing-house; it existed when the herring fishery was prevalent at Wallasea and Leasowe.

6. Previous to 1840, it was related by an old man, that about 1775 he saw a branch of an apple tree which protruded from the side of a sand hill, and gave evidence of vegetable life; and there is a more remote† tradition that part of a cherry tree bore leaves and blossoms.

6. An entire wood, called the Sniggery Wood has been sanded up on the Lancashire coast. Travellers by rail from Liverpool to Southport, may see the trees protruding from the sand hills, a little to the north-west of Crosby Station. They were in leaf in June, 1866.

7. Various relics have been found on the surface of the

7. Thousands of similar relics have been discovered

* Randle Holme represents "Mr. Meolse" as "lord of ye said Towne" in 1669; and in all probability he resided there. Sir Roger Mostyn of Mostyn and Sir William Stanley of Hooton were then Freeholders in the Township.

† Martin.

ground and underneath it, when the sand has been cleared away;—*e.g.*, flint arrow heads, bracelets (apparently) of carved oak, pottery, objects of iron and brass, spindle whorls, spoons, &c.	off the Cheshire coast. See *Ancient Meols* for details.
8. About 1825 the tombstone of the family was discovered, prepared in 1613 before the death of the laird or his lady. It is now preserved in the church of the united parishes of Dyke and Moy.*	8. The tombstones at Formby, which had long lain buried in the sand, are now visible in the restored churchyard, and some of them are of great interest. Tombstones, as it is supposed, of the submerged graveyard and attached to Lee's Kirk near Leasowe, have been seen within the last two or three years beneath the tide.
9. About 1830, a large stone coffin was dug out of a steep bank near Findhorn.	9. A beautiful slab with an incised cross, has been discovered by Mr. H. E. Smith on Hilbre Island, at the remains of a forgotten burying-ground. The head of a beautiful Saxon cross, which was probably sustained on an upright shaft, was turned up several years ago, and is now in my own possession.
10. Large tracts of land have been restored to cultivation by trenching sometimes to the depth of eight feet, and laying on the surface the rich black vegetable soil which had been buried for two centuries.	10. At Freshfield, the sand has been beaten back and cultivation restored; and the same is true at Formby. At Southport and Birkdale, the sand has been conquered in like manner, and the hills levelled for the erection of villa residences, with which streets and gardens are connected.

* *New Statistical Account of Scotland*, vol. xiii, p. 221.

11. The vitality of various seeds contained in it has been tested; and four species have grown after this long concealment; viz., mouse-ear,* scorpion-grass, purple archangel, and the corn-spurrey.	11. I am not aware of any corresponding fact.

In the adjoining parish of Kinloss, there are sand hills similarly drifted; which often change their position. Owing in a great degree to this circumstance, the present town of Find-horn is the third which has borne that name, and its existence is threatened at present. The other two sites were destroyed.† This is more remarkable in some respects than either the desertion of Formby or the destruction of Ancient Meols on our own coasts.

The parish which adjoins Culbin on the west presents a curious phenomenon. A bar in the harbour is moved gradually westward by the tide; while two sand hills, more than 100 feet in height, move slowly to the east, retaining throughout their original form!‡

After this explanation, the following will readily be understood. There are at Formby on our north shore, no fewer than four distinct surfaces.

A *The Moss*, as shown on old maps,—Smith 1588, Speed 1610, Morden 1660 (?), &c.,—with which we may reckon the horns, ancient canoes, &c., found in Martin Mere.

B *Cultivated land*, with streets of the town, a park, orchards &c., of which particulars are given hereafter.

C *Sand*, which buried the streets and much of the land under cultivation, from about 1750 till 1850.

D *Cultivated land.* This has been recovered from the sand, especially by the late Mr. Fresh of Freshfield. A stratum of vegetable soil is placed over the sand, and on this upper surface stand some modern villas and gardens.

* Cerastium arvense, Myosotis scorpioides, Lamium purpureum, and Spergula arvensis.

† *New Statistical Account of Scotland*, vol. xiii, p. 203.

‡ *Ib.* Parish of Auldearn, p. 7.

V. Ancient Burying Ground.

Mr. Boult's remarks on this subject may be embraced under three heads, viz. :—

1. He omits, (undesignedly I am sure,) an important portion of the evidence.

2. Some of his statements have evidently been made in mistake, as I find it impossible to bring them into accordance with the facts.

3. His reasoning is sometimes illogical.

The following narrative is quoted by Mr. Boult from the *Liverpool Courier* of 19th March, 1828.

"A very singular fact in reference to this subject [sea encroachment,] "has come to light this week. Mr. Nimmo, the engineer, is now em- "ployed in taking levels, and making observations on this part of the "shore, [opposite Leasowe light], with reference to the ultimate operation "of the tideway and currents on the safety of the harbour. In perform- "ing this duty, he has had occasion to sink through the substratum on "the shore in several places, where he has not only met with the clearest "evidence of ploughed fields, forests, bogs, &c., beneath the surface of "the water, but that the sea has also invaded the territories of the dead "as well as of the living.

"A graveyard, if not a churchyard, has been discovered about 150 or "200 yards below the flow of the tide, nearly opposite the Mock-beggar "lighthouse. Numerous human remains have been discovered lying "buried beneath the surface; and if these skeletons had been found "lying indiscriminately under the surface of the soil, we might have "supposed they were the remains of some hapless ship's crew, ship- "wrecked at some remote period on this part of the coast. But what is "the fact? That they are found in hundreds, not lying as they would "have been if casually thrown there. No; but deposited with all due "regard to the usages of consecrated ground, side by side in an east- "wardly direction. *This discovery has*, as it was well calculated to do, "*greatly interested the gentlemen who were upon the survey on Monday* "*last*, and will furnish a highly interesting subject for subsequent "investigation."

"We have since been informed, that a graveyard may be seen "amongst the sand hills at Formby, far removed from any habitation; "and so situated that it may at any moment be buried in the sand, "which by a hurricane might accidentally be detached from the hills "by which it is surrounded, and might there lie unnoticed for centuries, "unless as in the present instance, the silent sanctuary of the dead had,

" in the pursuits of science or objects of commerce, been adventitiously " discovered, and thrown open to the research of the antiquary, or the " observation of the physiologist. In all probability, this submarine " cemetery, as it may be termed, which has now been so singularly " discovered, has been similar to the one at Formby, not connected with " any church, but in every other respect considered as sacred ground, " under ecclesiastical regulation and privilege.

" We cannot yet hear of any one who has the slightest recollection " of the burying ground in question; and it will, very probably, be a " difficult task to ascertain its antiquity."

1. *Evidence withheld.*

[A.] Mr. Boult omits to state that public attention had been prominently drawn to the subject for months before, in a series of articles in the *Courier*, and that the writer of these articles was Mr. Thomas Kaye, author of one of the best guide books to the town and neighbourhood, *The Stranger in Liverpool.* The public, therefore, had not forgotten the subject, nor was it a new one; but their attention was kept directed to it, by the best local historian of the time.

[B.] Mr. Boult omits the whole of the first paragraph of the article, and also the circumstances which explain it.

It appears that on Saturday, the 8th of March, 1828, at a meeting of the Dock Board, two short reports were read, one from Messrs. Stevenson and Nimmo, (consisting of two paragraphs,) on the security of the Cheshire lands eastward of Leasowe, and the probability of the sea making its way through to Wallasea Pool;—the other from Mr. Hartley the Dock Engineer. The Report of the Proceedings goes on to say—

" Four gentlemen from the Common Council being appointed to view " the situation of the grounds and embankments, four were also " appointed by the Dock Committee to go with them on Monday next, " and to be accompanied by Mr. Hartley their engineer, and the " Harbour Master."*

Now it will be observed that these observations were made at the equinoctial spring tides, the highest of the year; and

* *Liverpool Courier*, Wednesday, 12th March.

therefore that the low water was the lowest of the year, and the most favourable for making observations on the bottom. During the week which intervened between this and the visit of the gentlemen, the alleged discovery was made.

Mr. Boult omits the following passage.

"On Monday last, agreeably to the resolution of the "Dock Committee, at the meeting held on the 11th inst., "a deputation consisting of Mr. Wright, Mr. Drinkwater, "Mr. P. Bourne and Mr. T. Brancker on the part of the "Corporation, and Mr. Horsfall and Mr. Brown on the "part of the Dock Committee, attended by Mr. Hartley "the Dock Surveyor and Mr. Askew the Harbour Master, "met on the Leasowe, opposite the Mockbeggar lighthouse, "at twelve o'clock, the time of high water, to mark the "operation of the tide with reference to the apprehended "danger of the Leasowe being overflowed, as stated in the "report of Mr. Stevenson and Mr. Nimmo which we gave "in our last. . . . . Every thing we see, and "every new discovery which is made on this coast, confirms "the opinion which we at first gave, that the encroachment "of the sea has been incalculably great, and that many "miles of space which is now covered by the sea, was "formerly cultivated land and used for the various purposes "of civilized life."

Mr. Boult has also omitted the following information given at the close of the paragraph which he quoted, possibly because it is strongly opposed to the views which he advocates.

"The high spring tides are always followed by a similar "reaction, and the water recedes, in consequence, propor- "tionately low. During this week, the bar between Rock "Point and Wallasey Hole has been nearly laid bare, with "but a few feet depth of water. The channel in this place "is very narrow, and we are informed by an eye-witness, "that a number of stones of considerable size, say three or "four feet thick, lie stretched across, extending from one "side to the other, assuming the appearance of a ford."

[C.] By doing violence to the quotation, Mr. Boult makes an important allusion in that which he quotes, wholly unintelligible. It is the part which I have indicated by italics, in which eight of the most prominent gentlemen of the town are publicly appealed to, within forty-eight hours, in an article which recites their names. If the statement had been untrue, or if the evidence had not satisfied them, there would have been a contradiction of it,—whereas there is a corroboration in the very next number of the paper.

2. *Statements not supported by Facts.*

a. Mr. Boult says that several persons have been "glib" in telling this story; and that all have quoted from this newspaper account. *Answer*—I have never met with a person till April of the present year who had read it; and newspaper notices of this kind only become valuable when the superior evidence,—that of original observers,—has ceased to exist.

b. All previous writers have concealed their authority. *Answer*—It is very natural for him to suppose this; but what motive could any one have for doing so? On the contrary, in 1847 I gave my authority, viz., that of the late Mr. Hartley one of the persons who were present on the 17th of March. Besides, the information was common property, and the facts were known conversationally throughout the whole town and neighbourhood.

c. He says I assign an authority for the statement in "*Ancient Meols.*" *Answer*—I assign none whatever in that work.

d. He says I do so on page 16. *Answer*—My allusion to the subject is on page 17.

e. He says that I assign as my authority the report of the three engineers, Messrs. Telford, Stevenson and Nimmo. *Answer*—I do not indeed; but I refer to their report respecting the ship canal, in the surveys for which I believed that

the discovery had been made. This opinion is now established.

f. Mr. Boult says he has referred to this Report, and finds no such record. *Answer*—There certainly is no such record; why did he make the reference? He appears to confound things wholly distinct. The three engineers just mentioned, having been engaged by Sir John Tobin to make surveys for an extensive ship canal from Wallasey Pool to Hilbre Island, entered upon them with great care; Mr. Nimmo's brother being the person to whom the operations were mainly entrusted. They gave in two Reports,* occupying in print, seven folio pages. The first is dated "London, "16th May, 1828," and estimates the cost of the whole work at £1,400,948; the second, dated "Chester, July 14th, 1828," estimates a separable portion at £734,163. While these gentlemen were in the town, the Corporation of Liverpool and the Dock Board took advantage of the presence of two of them, to inquire respecting a single point, local and in some degree subordinate. These gave in the brief report alluded to above, and Mr. Hartley's, also noticed, was a fourth Report. The editor of the *Courier*,—evidently not knowing of the greater and more extended surveys which were in progress,—says the discovery was made during the investigations for the Dock Board, but this is at variance with the facts afterwards made known. The map appended to their two Reports, enables us to fix within narrow limits, the actual position of the alleged burying ground.

3. *Inconclusive Arguments.*

1. No graveyard is noticed on the chart of Grenville Collins, surveyed about 1690, *ergo*, &c. *Answer*—The major

* The originals, with the autograph signatures, and a copy of the map printed to illustrate them, are at present in my possession. For a full explanation respecting them, see Sir John Tobin's Evidence in "Report of the Enquiry "respecting the Corporation of Liverpool, 1833."

premiss is false, that such a thing was necessary or probable. Visible objects are of course given, but not mere enclosures. Besides, there is evidence that the church was in ruins in 1690.

2. The number of bodies could only have been estimated by sight! *Answer*—It is not by lifting the cap of cultivated land off several square miles of a coal field that we ascertain its extent;—nor is it necessary or usual to uncover the whole of the ruins of a castle, monastery, or buried town like *Uriconium*, to ascertain its extent and limits.

3. Mr. Stevenson, in his paper read before the Wernerian Society, is silent respecting both the signs of cultivation, and the submarine graveyard;—therefore both must have been apocryphal. *Answer*—(1) The subject of his paper has been already noticed in connexion with the submarine forest, and it appears from it that he made only a "perambulatory survey" in the month of February, accompanied by Sir John Tobin and William Laird, Esq. He spoke as to what he saw only. (2) Besides, as he read the paper on the 8th of March, and the discovery of the graveyard was made between the 10th and the 17th, he would have required the gift of prophecy to enable him to refer to it. (3) The portion printed in the *Courier* is an "extract" only; he may have alluded to the evidences of cultivation, if they had been previously observed. (4) We know that these evidences did and do exist, and that they are occasionally visible to some extent, to this day; hence the probability is not weakened (but on the contrary strengthened) that the other alleged fact, recorded concurrently, is also genuine.

4. If the allusion to Formby old churchyard be incorrect, the whole story may be untrustworthy. *Answer*—(1) The whole of this hypothetical proposition is false; for Mr. Boult fails to distinguish between the essential and the accidental, the direct and the indirect, the important and the irrelevant.

The illustration respecting Formby churchyard might be inaccurate or wholly false, and yet the record respecting a submarine graveyard literally true. Indeed there are some paltry errors in the narrative, (*e.g.*, that the deputation was appointed on the 11th,) but this only shows the absence of design, and the impossibilty of the narrative being spurious. (2) The "antecedent," or first number of the proposition is also false in itself, therefore the "consequent" falls to the ground. The allusion to Formby old churchyard is substantially correct; but the writer speaks as if he had not recently seen the place himself.

5. Mr. Boult, on several occasions, appears to ridicule the newspaper expression "ecclesiastical regulation and privilege." *Answer*—Every churchyard is necessarily under "ecclesiastical "regulation," the nature of which is well known; and it is "privileged" to this extent, that by consecration it is devoted to ecclesiastical purposes for ever.

6. He also wishes to know whether it was a Protestant or Roman Catholic place of interment. *Answer*—(1) This is beside the point at issue; for we are discussing the mere *fact* of existence, not ownership or other details. We are not to question the testimony of sailors who allege that they have passed a wreck at sea, even if they cannot tell the name of the vessel, or the port of her destination, or the names of her owners. (2) Yet we may reply to the inquiry by the analogy of a somewhat similar case. The old churchyard at Formby was in use centuries before the Reformation; it was therefore used by both Roman Catholics and Protestants: and it was preferred by the former until within the last few years, when they obtained a local burying place of their own.

Having thus set aside, not a part only, but the *whole* of Mr. Boult's criticism; let us examine the positive evidence for the existence of a submarine grave yard. It may be summarised briefly as follows:—

4. *Positive Evidence.*

(1.) There is a public contemporary record of the finding of it; and not one primary statement in that account has yet been invalidated.

(2.) There were numerous and competent witnesses on the spot shortly after; and the explanations which were given satisfied them of the correctness of the account.

(3.) Besides these, such men as Dr. Traill and Mr. Jos. B. Yates, who are dead, and Mr. Thomas Kaye, who still survives,* all of whom took a deep interest in inquiries of this kind, fully believed it.

(4.) Dr. Traill and Mr. Yates had means of knowing which we do not possess, in personal intercourse with the engineers; and Mr. Boult has chosen a good time for promulgating his doubts, thirty-seven years after the event. It was alluded to by Mr. Yates in 1843; by myself in 1846; and it lay in Mr. Boult's way in 1854, '55, and '56. Now, nearly all of the contemporaries have gone to rest; and the mental light is dim in one of the ablest and most accurate who still survives.†

(5.) Mr. Rawlinson, after a full investigation of the evidence, saw no reason to entertain any doubt on the subject.

(6.) In April, 1846, the late Mr. Jesse Hartley wrote to me on the subject, explaining that it was Mr. Nimmo's brother and not himself who had found the skeletons. His letter which I still possess, was published in 1847, down to which date he appears never to have entertained a doubt on the subject.

(7.) The traditions respecting a submerged burial place still linger in the neighbouring villages; though in all the immediate neighbourhood I never met a farmer or peasant who had heard of this alleged discovery in 1828.

* He died on the 6th of September, or about nine weeks after this paper was read.

† Mr. Kaye, see previous note.

(8.) Several persons exist who declare that at low water of spring tides they have seen grave-stones. One man, Christopher Houghton, now resident near the Alt, who was in the employ of Mr. Hartley in 1828, remembered the discovery very well.

(9.) In Bishop Gastrell's *Notitia*, we find the following record respecting the parish of Wallasey.

"There were formerly two churches here, one called "Walley's Kirk, situated in ye present church yard, y^e^ "foundations of which are yet visible; and Lee's Kirk, "near a narrow Land still called Kirkway; but when one "became Ruinous and ye other wanted a Priest, they were "both taken down, and ye present church was built in "their stead."*

The Rector got this and other information in 1718 from Mr. Robinson, who was master of the Grammar School, and who, Canon Raines informs us, had written a history of the parish which was in the parish chest. As personal information extends back usually about half a century, Mr. Robinson would know the facts through eye-witnesses from about 1670, a period antecedent, by nearly 20 years, to the survey by Captain Grenville Collins. Canon Raines is satisfied† that the Chaplain who was supported by the Priory of Birkenhead was the one who officiated at Lee's Kirk (now extinct); and that the *two* medieties of the Rectory and the *two* patrons corresponded to the *two* churches.

(10.) In the *Liverpool Courier* of March 26th, 1828, the following occurs in the "notices to correspondents."

"We have not this week had the opportunity of pursu- "ing this subject; but we think we shall be able to show, "that the ravages of the sea on the north-west coast of "Cheshire have involved the destruction, not only of the "lighthouse to which we have before alluded, as well as

* *Notitia Cestriensis*, Cheetham Soc., pp. 175, 176. † *Ib.*

"the graveyard mentioned in our last, *but also of a* "*Church*, which formerly stood far out upon the beach, "considerably to the northward and westward of the tide's "way. Whether this Church was in any way connected "with the cemetery just discovered, we have not yet had "the means of investigating."*

Now here is evidence of the very strongest kind; that which is defective and that which is redundant mutually illustrating. A church was in ruins and had disappeared, with its churchyard, at the close of the seventeenth century: but traditions of it survived and of its locality, so late as 1828. And while the record of this lost church lay in manuscript in the Chapter House at Chester, some physical investigations discovered skeletons, and other observations discovered grave-stones, suggesting independently the idea of a churchyard. I must leave this statement of the evidence to the reader. What evidence are we to regard as satisfactory, if history, tradition, physical discovery, the assent of contemporaries, and the testimony of credible and competent witnesses are all to be set aside? Our senses we know deceive us; verbal statements are not always true; and even alleged mathematical demonstration has been questioned. But it may be allowable to say that in spite of all our formality and precautions in criminal trials, hundreds of men have closed their career on the gallows, in consequence of circumstantial evidence far less strong than what is here submitted.

VI.—Sections showing Strata.

The following cuttings and borings, some natural and some artificial, show the strata and their mutual relations, and illustrate the general facts connected with the inquiry.

* It is morally certain that Mr. Boult read this notice with care, but he no where gives it as part of the evidence.

1. *Mr. J. P. G. Smith's Section.**

In the year 1849, in the course of some works connected with the Birkenhead Docks, there was a canal or drain excavated, extending across Bidston Marsh. It was about a mile and a quarter in length, lying from the Poulton and Bidston road, in a north-westerly direction, towards the Leasowe lighthouse. Its depth was twelve to fourteen feet. The strata were described as follows, commencing at the bottom.

1. *Boulder clay*, dipping slightly to the north. It disappears below the bottom of the cutting, about 300 yards from the south extremity, but re-appears at the northern end.

2. *White sand*, about three feet thick throughout. It contains remains of numerous sea shells and rounded pebbles like those on the coast. It is almost certainly a sea deposit.

3. *Vegetable soil*, which has supported a rank vegetation. There are the remains of a dense forest, principally of oaks: but mixed with alders, elms,† and other trees. The oaks were in general hard and black, the other trees were more spongy and of a dull red. The trunks that remain appear to have grown just over the sand, and to have pushed their roots down into the clay below. Some of the oaks were very large: one was about nine feet in circumference above the spread of the roots. The whole of the trees appear to have been felled by the axe,‡ not to have been blown down, or thrown by an irruption of the sea.

* *Proceedings of the Literary and Philosophical Society*, No. v, p. 169.

† The walnut, the yew, and the birch have been recognised. Three or four quarts of nuts were found at one place, supposed to have been the hoard of a squirrel. *Ib.*, p. 173.

‡ In other places, the facts are different, as in North Meols on the Lancashire coast. "There is little or no timber growing on the coast, and a person, from "observing that all the trees to a great distance up the country are as it were "thrown on the western side, and bent the opposite way, would be apt to "conclude that none would grow; yet it is certain that the country was once "very woody, for in the moss lands large quantities of oaks are found within "a foot or two of the surface, lying with their heads all one way, as blown "over by a violent west wind, or overthrown by a sudden eruption of the sea."—*Roby.*

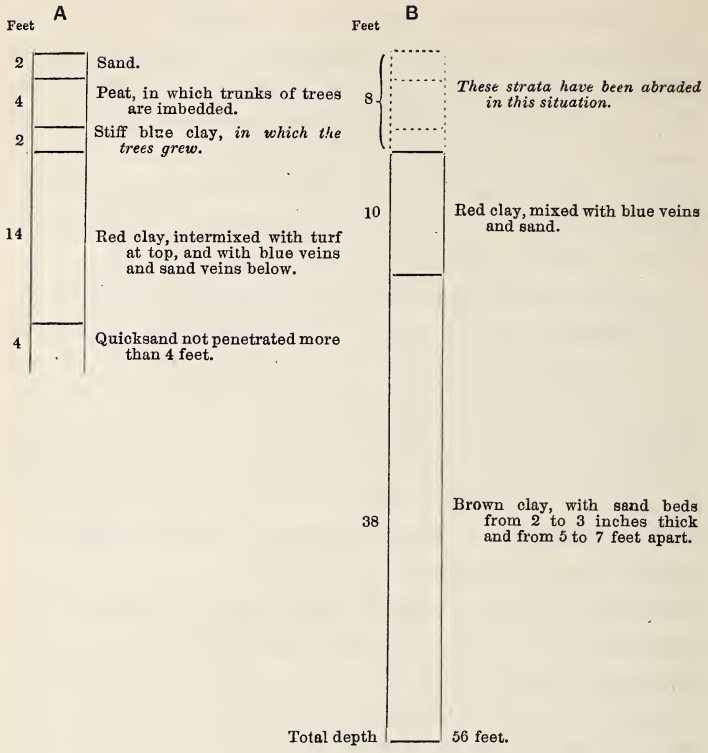
4. *Peat or turf bog*, irregularly accumulated: varying in thickness from two or three feet at the south-east end of the cutting, to twelve or fifteen feet a few hundred yards from the road. It then dips towards the north, and rises again, continuing near the surface of the marsh almost to the end of the cutting. Some of the vegetable remains in the peat, as *rushes equiseta*, &c., were very perfect; especially in the deepest portions of the stratum.

5. *Alluvial soil*, filling the hollows of the peat, and forming the surface soil of the marsh. It is deep where the peat is shallow, and *vice versa*. Where it comes in contact with the peat it is darker coloured than elsewhere; and as it is infiltrated into all the little chinks and crannies of the peat, and as the most delicate vegetable portions remain unimpaired, the evidence is irresistible that it was deposited in still water. In fact, great part of the Marsh appears to have formed, at one time, part of the Pool.

This section, with which Mr. Boult was well acquainted at the time of its publication, he has omitted to notice. It disproves several of his assertions; *e.g.*, (1) that no local stratum of turf bog is more than three feet thick, (2) that the oak trees grew in it, (3) that the rootlets only and not the roots, penetrate to the clay.

2. *Mr. Cunningham's Borings.*

In the year 1854, two sections of the strata near Leasowe lighthouse were exhibited to the Geological section of the British Association for the Advancement of Science, by John Cunningham, Esq., F.G.S. Section A was taken on the outside of the embankment, and section B to seaward, or between the embankment and low water. The diagrams show the various strata to a depth of fifty-six feet. They are prepared from the Report of the Association for its second meeting at Liverpool.



"The abrading action of the tidal currents on the edges "of the strata, prepares a ready means of escape for the "water and sand from underneath the clay during the "refluxes of the tides, and the hydraulic pressure of the "water at a higher level in the permeable strata, forces "the sand from underneath the clay beds;—hence the "subsidence of the shore, &c.

"The clay bed near the surface, in which the trees grew, "together with the superimposed peat or vegetable matter, "resist the abrading power of the water longer than the "other materials. They therefore remain on the surface

"and descend conformably with the lower strata under-
"mined, and consequently become *submerged* under the
"level of low water."*

Mr. Robert Chambers† expresses Mr. Cunningham's ideas more briefly and perhaps more plainly, when he says,—

"The subsidence in these cases is caused by the attack
"of the sea upon the sand-beds of the boulder-clay, sweep-
"ing it out, and so causing the ground simply to collapse,—
"a minor, yet still interesting phenomenon."

It will be observed that neither Mr. Cunningham, Mr. Robert Chambers, nor any other member of the Geological section ever questioned the fact that both a subterranean and submarine forest exist in Wirral:—on the contrary they explain and account for the existence of the latter. It appears also that the surface upon which trees grow at present, on the south-east corner of the Marsh, is only eighteen inches higher than the surface upon which the old forest trees flourished.‡

Without interfering with any of these facts, it may be that a general subsidence of the whole district has taken place,—but this must have been at a period so remote as to be unconnected with our present investigation.

3. *Mr. Morton's Sections.*

Mr. G. H. Morton, F.G.S., made no cuttings; but he observed with unusual care the strata at two points on the Cheshire shore; viz., near the Lighthouse and at Dove Point, beyond the south-western end of the embankment. On the 2nd of September, 1862, he was accompanied in his observavations by the members of the Liverpool Geological Society, and I had the pleasure of joining the party. The strata at Dove Point arranged from the top downwards, are as follows:—

* *Report of the British Association* for 1854, p. 81.

† *Edinburgh Papers:* Ice and Water, p. 14.

‡ *Report of the British Association* for 1854, p. 82.

A	Sand hills, resting on the natural surface, and of varying height.
B	Vegetable mould and peat, 1 foot thick.
C	Blue silt, 1 foot thick.
D	Large forest bed enclosing trunks of trees, 3 feet.
E	Blue silt, 2 to 3 feet.
F	Lower forest bed, 1 foot.
G	Boulder clay, depth not determined.

At the other spot,—viz., near the lighthouse,—the strata marked D and E are wanting: which may be explained by the fact that the quicksands were more abundant at Dove Point, and that the surface sunk more frequently than at the other point. In fact Dove Point appears to be the remains of an elevated headland, while the position of the lighthouse is only a continuation of the marsh.

Dr. Edwards thinks the stones in the boulder clay are from the shores of the Solway:* they vary in weight from several tons to only a few ounces.

These three sections,—occurring in different positions, and under different circumstances, as well as being noted by different observers,—are of course somewhat dissimilar. But in all important points they are concurrent, and indeed corroborative. They exhibit the following in a descending series:—

1. Sand hills near the shore.
2. Vegetable mould.
3. Clay, called alluvial deposit.
4. Turf beds, one or more according to place.
5. Trees imbedded; a sub*terranean* forest when we speak of the land, a sub*marine* forest when we speak of the shore.

* *Report of the British Association for* 1855, p. 61.

6 Boulder clay and quicksand;* the latter either in veins or in masses.

Mr. Boult alludes to a peat bed resting on solid stone, as observed in the foundations of the Custom House: and thence argues that the trees could not have grown there. The reply is that they could have grown there, as it is only necessary to suppose that the intervening beds of sand and clay have been washed away, as a leaf is torn out of a book. But even if the trees did not grow on the spot, there is no necessity to go to Chat Moss for them. They may have glided down from the upper margin of the pool towards the bottom: or from a higher to a lower level of the rivulet flowing from Moss Lake Fields.

VII. Evidence from Antiquities.

The section of Mr. H. Ecroyd Smith is reserved for a special place, for though it corroborates all the others, it does far more. It exhibits a relation between the Geology and Archæology of the district, and throws some light upon both.

Mr. Smith has been a resident in Liverpool for about ten years; he has made the Cheshire shore his special and constant study;—he is the best authority on the subject of the finding of antiquities, and the only one on the important matters now to be noticed.

In 1863, when I was giving Mr. Morton's record of strata at Dove Point, I added a few words† of my own, to show the affinity of Archæology. I was taking the strata in the order and with the letters just given in Mr. Morton's sections.

* "Two wrecks, which occurred in November and December, 1856, afforded "opportunity of observing the action of scour upon the sand, justifying at the "same time the definition of quicksands."—*Hills on Hydrography of the Mersey Estuary*, pp. 48, 49. See the detailed explanation.

† *Ancient Meols*, p. 122.

B—"Peat bed about a foot thick," (over which are traces of cultivation in sandy earth, with recent shells, bones, and teeth).

D—"Large forest bed," &c. *On this portion the principal Roman Fibulæ have been found.*

The words which I added, are separated by brackets in the one case, and printed in italics in the other: they are given as additional and important information, intimately connected with the subject. Mr. Boult seems to think that I designed to corrupt the author's text; for he remarks pointedly that the words are not in Mr. Morton's tract! I was treating of Antiquities, and referring to Geology as subsidiary and explanatory.

It is interesting to see how Mr. Boult meets the great fact that nearly 5,000 objects connected with the past, have been found on this coast, below high water mark, illustrating different nations, ages, and uses; and of nearly twenty different sorts of material. His reply is twofold: and it is not too much to say of it that it is somewhat in character with his whole paper. It is—

(1) That the whole discovery is a "mare's nest!"

(2) That admitting the existence of the objects, it is possible that as the Romans were at Warrington, these also were floated down from Chat Moss! The remark applies especially to the fibulæ.

The first of these requires no reply. But we may be permitted to say that when long and laborious observation, extensive inquiry, and accurate analysis, are so contemptuously put aside, there is a flagrant error connected with either the subject or the critic.

In a somewhat similar case, before the evidences were sufficiently clear to make scepticism ridiculous,—and they never were more complete than those in our own neighbourhood,—there were wise and learned men who were not satis-

fied with the discoveries of M. De Perthes at Abbeville, and Dr. Rigollot of St. Acheul. But I doubt whether in the whole range of scientific writings, there could be found half-a-dozen persons who would call the *langues de chats* of the drift, or the bronze and bone implements of the Swiss lacustrine habitations, "a mare's nest."

As for the Chat Moss explanation, there is not even an attempt to advance a single fact in its support. It stands as an uncorroborated and extravagant surmise against such an array of facts as few persons have ever had an opportunity of examining. A few considerations, however, may be arranged in order.

1. The Romans were at Warrington; *ergo* they were probably at Chat Moss, and dropped their fibulæ on the turf, which could have been floated down, as already suggested. *Answer*—Their presence at Warrington argues a *possibility* only, not a probability; and on this possibility so many other contingencies depend,—some scarcely possible, none probable,—that the general proposition is utterly untenable.

2. Let us suppose the possibility converted into a probability, and the probability into an ascertained fact: let it be admitted that the Romans *were* at Chat Moss, that they dropped their fibulæ, &c., on the surface, and that many of these were floated down and deposited on the Cheshire coast,—even then the proposition is untenable. For we have to account for more than Roman articles merely,—there are Pre-historic, British, Danish, Saxon, Norman, and Mediæval objects, showing the occupation of the same ground by successive communities, varying in origin and ethnology. Did all these successive races of pilgrims pitch their tents at Chat Moss; and if not, what becomes of the suggestion?

3. Again, it is said that the Mersey had no attraction for the Romans. *Answer*—No one associates them with the

Mersey. But they were at Chester for many years and in large numbers, and reached it by the Dee, of which the Hoyle Bank then blocked up the direct passage. They coasted along the Welsh shore by Chester Bar. They could reach it by sea, however; landing on the extremity of Wirral, and marching by land to Deva. This was a common practice till within the last two hundred years: and it was often a moral necessity in the early days of navigation.

4. It is quite true that in 1859 an eminent Archæologist suggested, as a mere surmise, that some of these objects might have been floated down from *Chester* and deposited in the still water on the coast near Dove Point; but a moment's thought sufficed to show him that this was impossible. It is clear that objects so floated would be deposited at the *bottom* of the sand with which they were drifted, not on the surface; still less would they be found on several surfaces, each exhibiting its own class and kind of objects.

We are now prepared to enter upon Mr. Smith's arrangement, and to show a succession of inhabited surfaces within historic times. This case is still more peculiar than that of Formby, at which we show a succession of four surfaces. The details were published by Mr. Smith in *The Reliquary*, for April, 1865; and they are accompanied by two wood-cut illustrations.

Arranging the series from top to bottom, they stand on the page as in nature. The place is the west side of the Dove Marks.

Strata.	Archæological Remains.
1. *Loose Shifting Sand*, forming the hoes or hillocks.	Mediæval fish hooks and other objects mostly of iron and badly corroded.
2. *Marshy Deposit.*	
3. *Firm Drift Sand.*	A few earlier ornaments. Objects chiefly Mediæval.
4. *Artificial Soil*, composed of	(1) Sea shells, including the

bog and sand, mixed with a little marl.	oyster, mussel, clam, cockle, and periwinkle. (2) Remains of the *Bos longifrons*, horse, dog, swine, &c. (3) Pottery and other Mediæval objects.
5. *Blue Marl* or Silt, with numerous roots of Equiseta, &c.	Saxon and Roman Coins and other objects.
6. *Forest Bog*, full of arborescent material. Contains numerous stumps and a few trunks of trees.	(1) Remains of the deer, ox, horse, wild boar, &c. (2) Arrow heads of flint, stone, and shell. (3) N.W. end, Roman coin, brooches, &c. (4) S.W. end, Saxon coins, &c.
7. *Blue Marl*, which separates into crystal-like divisions, and is much traversed by vegetable fibres.	(1) A few primeval flints,—artificial. (2) *Bos primigenius*, *Megaceros Hibernicus*, and *Cetacea*.
8. *Boulder Clay.* *Lower Peat*, with a few tree stumps.	No traces of Man or of his works. No animal remains.

This plain statement requires no commentary, as it speaks for itself. But there is an important fact to be added which requires more prominence than can be given to it here. It is that Mr. Smith has afforded the most striking evidence of the existence of land to seaward; for he has discovered the personal seal of *William de Meles*, whose mansion was far below the tide mark, and that of *Amabella de Lathom*,* a member of the Stanley family, two distinct branches of which possessed land on this coast. Seals of this kind were equivalent to the autographs of modern times; and were usually borne about the persons of their possessors. The former is circular, and of pewter, with an octagonal flower-shaped figure in the centre—S' WILLI DE MELES. The latter is of lead, and oval, the legend running outside of a central ornament—S' AMABELIE D' LATHUN. These facts are of extreme interest as links in the chain of evidence: but apparently Mr. Boult "cares for none of these things."

* *Ancient Meols*, Plate xxvii; figs. 1, 2; pp. 277, 278.

VIII.—Limits of the Cheshire Shore.

1. *Extent of Inroads by the Sea.*

The following consecutive statements will probably place this subject in a sufficiently clear light :—

1. Mr. Boult commences by assuming that the wasting of the coast commenced in 1690 (p. 9). Now it is quite true that we have no authentic record of the state of the shore line previous to that date ; but the same causes must have produced the same effects for centuries before. We therefore do not know how long it has been going on ; but we know that the last one hundred and seventy years differ from similar periods only in the fact that the changes have been observed and recorded.

2. He assigns for the waste in modern times eight yards per annum ; and yet he infers that it amounts to four hundred yards in all, in one hundred and fifty or two hundred years. It is only necessary to say that at the rate assumed, fifty years would suffice for the removal of four hundred yards.

3. The three engineers state that in 1690 " the Dove Point " projected a mile and three-quarters from the shore ;" so that even within historic times several miles of shore may have been washed away.

4. On the 29th of April, 1864, a section of the coast was shown to a Committee of the House of Commons. It had been prepared by Mr. Chapman, an eminent engineer, in 1813, and improved to 1828. It appears to have been produced with the Wallasey Embankment Act of 1829. Its date is important, as showing the condition of the coast at the very time of the finding of the skeletons, by Mr. Nimmo the younger. This section, with the corresponding plan, has been lithographed of the full size ; and both were published, in 1851, by Mr. Rawlinson in his *Inquiry respecting Poulton-cum-Seacombe*, as well as in 1863, by myself in *Ancient Meols*.

5. The following is the evidence of Mr. John Coode, a civil engineer, given before the same Committee,* 29th April, 1864 :—

"If the Committee will refer to the section behind them, "they will see that the portion coloured red was washed "away between 1771 and 1792. The breadth of the "foreshore washed away was ninety-three yards, that is "twenty-one years, or four and a half yards per annum. "The yellow portion was washed away between 1792 and "1813, being a depth of ninety-nine yards in twenty-one "years, or four and three-quarters yards per annum. "There is the portion between 1813 and 1828, this small "portion, which is washed away at the rate of about one "and three-quarters yards per annum ;—and this inner "portion between the present line of bank and that of "1828 has been washed away at the rate of one yard per "annum. These are facts against the mere supposition "we heard yesterday ; and it is a little remarkable that "*the rate is decreasing.*"

It appears from this that during the most recent period of thirty-one years the foreshore has lost an average of about one yard twelve inches annually ; while during the previous forty-two years, (going back to 1771,) it lost, at an average, four yards twenty-two inches. This fact is explained by two others, viz. : (1) that in the close of last century the foreshore was much exposed to the wind and tide, whereas now it is sheltered in a curve formed by its own destruction ; and (2) that at the earlier dates the material was sand, whereas now it consists in a great degree of stiff clay. Thus, coming down to modern times, we have two members of a descending series ; looking back towards the past we have two members of an ascending one. It is reasonable to infer that if we go back fifty years further, viz. to 1721, the wasting of the shore was still more rapid ; and that in the thirty years previous to that, the wasting was more rapid still ; though the inevitable

* On Wallasey Embankment Bill, and Wallasey (Powers to Commissioners) Bill.

want of accuracy in Captain Grenville Collins's map prevents us from establishing the facts by measurement of areas.

6. I once heard of a map of the district which represents cattle as grazing on Hoyle Bank; and if so, the bank must have been a virtual continuation of the mainland, though the grassy surface has long been washed from off it. Mr. Boult says he has seen the map at Mostyn Hall in Flintshire, a fact which would go far to overturn some of his own statements; but on examination it appears that he saw only the map of John Mackay, 1730, which was discovered by myself several years ago, in the Bodleian Library, Oxford.

It is important to notice, however, that there are other evidences of the relation of some of these banks to the land, at a period comparatively modern. For example, (1) the three engineers say that in 1690 "the Rock channel was then "nearly all dry at low water as far as Mockbeggar, between "which and Burbo sand there was only a quarter fathom," [*i.e.*, eighteen inches.] (2) In 1828 the tradition survived that there had been a church on Burbo bank. (3) In the same year the workmen who found the alleged submarine graveyard found a series of large square stones crossing the Rock channel, as if stepping-stones to be used at low water. (4) About 1820 a ship, belonging to Mr. Thomas Carson, was stranded on the Burbo bank. In getting her off, it was found that she was "sitting in sod;" *i.e.*, surrounded by vegetable matter and arable soil, underneath the top covering of sand.*

7. The following facts show also that the wasting of the coast by the sea is much greater than is commonly supposed.

(1) On the 24th of December, 1827, an old man, called

* "In addition to the facts which we have already mentioned of the encroach-"ments of the water on the Cheshire shores, we have since learned that if the "sand-banks, which lie several miles distant from the present shore, be pene-"trated to a sufficient depth, evidence of their covering what was formerly dry "land, is furnished by grass, peat and other vegetable matter being found at the "bottom."—*Liverpool Courier*, 16*th January*, 1828.

Thomas Barclay, then aged 93, said—"These flags [the "floor of his cottage,] on which my chair stands, were "taken from the bottom of a well which in former days "supplied us with water; but it now lies washed up and "buried two hundred or three hundred yards below the "reach of the tide. Many a time," he added with enthusiasm, "have I enjoyed the favourite sport of 'Prison-"'bars,' when we used to assemble in our youthful days "more than a quarter of a mile from the present flowing "of the tide."* Now a quarter of a mile is four hundred and forty yards; so that within the memory of an individual, the foreshore had been thrown back say four hundred yards. (2) "As much as eight yards in width "has recently been swept away at one tide."† (3) "Within "the last three years not less than two acres of land "belonging to the estate of the late Mrs. Boode, have "shared the same fate."‡

It may be remarked, in corroboration of Barclay's testimony, that "Prison-bars" was a common Cheshire game. The young people assembled in the evening, or perhaps on a Saturday or holiday; they fixed upon some place where there was a "swang" of land, or a large unoccupied area; and the plain on the margin of the sea presented unusual facilities for the game. They usually played for a sheep and potatoes and a barrel of ale; and at the close of the game, the mutton and potatoes having been cooked, were eaten by the members of the party, and the ale was drunk. Such meetings may be regarded as introductory to the scenes of merriment exhibited at Upton Fair, and to the modern exhibitions known as Tranmere Wakes.

8. In quoting from Mr. Stevenson's paper, read before the Wernerian Society, March 8th, 1828, Mr. Boult gives the testimony of the old man, Barclay, on p. 16. It is there stated that "in the course of thirty years the shore of Lea-"sowe lost, by *measurement*, eleven Cheshire roods [rods or

* *Liverpool Courier*, 26th Dec., 1827, 16th January, 1828.

† *Ib.* ‡ *Ib.*

" perches], or eighty-eight yards; and he verily believes that " since he knew the shore, it has lost *upwards of half a mile* " of firm ground."* This view was corroborated by two other old men who were examined at the time, namely,— Henry Youd, aged 86, and John Crookson, aged 80. It is only necessary to remark that " half a mile " represents eight hundred and eighty yards lost within less than a century, whereas Mr. Boult thinks that four hundred yards only have been washed away in one hundred and fifty or two hundred years.

9. The subject of wells is important; and they are of a peculiar structure all over the broad flat which characterises the seacoast on both sides of the Mersey. A flat stone, with a circular hole, usually covers the mouth; and the water is commonly drawn by a pole with a bucket at the end, but occasionally by a windlass. Sometimes a rim, about four feet high, is built round the well, as in those of the East; and there is an interesting one of this kind near the gate of Leasowe Castle, with a gallows crane suspended over it. The remains of an old well, probably the same as that to which Barclay alluded, is known to the present hour. Though it lies far below the flow of the tide, hundreds of persons yet living have drunk of its waters, and many have ridden round it in exercising their horses.

2. *The Race Course.*

When Captain Grenville Collins made his survey in 1687, " Wallissey Race " existed *to seaward* of Mockbeggar Hall or Leasowe Castle, and it is so marked on his map. This, however, is not the first mention of it. It was alluded to in James's *Iter Lancastrense*, 1636, at which time it afforded a beautiful road for either horse or footmen round the shore, contrasting most favourably with the rugged highways and

* *Liverpool Courier*, 9th April, 1828.

paths in other parts of both Lancashire and Cheshire.* There is an old coast road to seaward of Leasowe Castle, marked on the map of 1794; and portions of it remain to this day at the two extremities. On the New Brighton side, it appears to run into the gardens of Leasowe Castle; and on the Hoylake side it terminates at Park Lane. The intermediate portion has been carried away with the seaward side of the race course. The oldest roads, however, still further to seaward, were not either "made" or enclosed.

Tradition says, and it is confirmed by facts of various kinds, that Leasowe Castle was originally built as a stand in the centre of the course. Indeed this is evident from its form, an octagon with towers at the alternate facets. The ground plan of it was sketched by Lysons, who visited it about 1800, and who also made two pencil drawings, all of which are in the British Museum.†

Mr. Boult objects to this, that the grand stands at Chester, Aintree and Newton race courses, are near the winning post, where the spectators may witness the final struggle; and not in the centre. To this I think I am right in replying that many of the old stands were in the centre of the course, or on

* In 1636, the roads in this part of the country are contrasted with the Roman roads by James, as follows:—

> Our wayes are gulphs of dirt and mire, which none
> Scarce ever passe in summer without moane;
> Whilst theirs through all ye world were no lesse free
> Of Passadge then ye race of Wallisee;
> Ore broken moores, deep mosses, lake, and fenne,
> Now works of giants deemed, not arte of men.

In 1770, the following was the condition of the north road from Wigan to Preston, as described by Arthur Young. "Travellers will here meet with ruts, which I "actually measured, four feet deep and floating with mud only from a wet summer; "what, therefore, must it be after a winter? The only mending it in places "receives, is the tumbling in some loose stones, which serve no other purpose but "jolting a carriage in a most intolerable manner. These are not merely opinions, "but facts; for I actually passed three carts, broken down in these eighteen miles "of execrable memory."

† Additional MSS. 9461, fol. 83 and 153.

a hill which commanded a view of the whole.* I have myself known one such, which was abolished in favour of a stand of the modern kind.

On the subject of the removal of the races from this course, tradition has as usual something to say. It is that a celebrated horse, called "Grey Raphael," of whom great things were expected, was made irritable and driven from his food, as the grooms alleged, by rats. Also, it was reported to Earl Grosvenor, ancestor of the present Marquis of Westminster, that a valuable horse of his was injured by bad water. There may have been a slight foundation of truth for both of these statements; but the probability is, that they were put forward by interested persons, as a cover for other reasons. On the stables of Mrs. Witherspoon, in Wallasey, there may have been seen, till lately, a horse shoe, indicative of the former residence of the favourites of the turf, probably even before the time when the Duke of Monmouth was personally present and a successful competitor.

3. *The Old Lighthouse.*

Mr. Boult says on this subject, "there has been a good deal "of elaborate discussion upon the existence of a second light-"house at the Leasowes," but he forgets to add that the doubts which were suggested were all his own. The researches of Mr. Hills, which were afterwards summarised by myself, show beyond dispute that there *was* a second lighthouse on the shore, and that with the existing one, it formed the two points which determined the straight line for the guidance of mariners. Since the seaward lighthouse was removed, that on Bidston Hill has formed the other point determining the same straight line. Accordingly, as Mr. Boult's first great act of scepticism has resulted in his conversion, we may hope

* The Messrs. Weatherby, to whom I was referred by Mr. Richard Tattersall, say that "in two or three instances" of modern race courses, "it is announced "that from the stand the race can be seen all the way round."

that in the present instance also, he will eventually find himself wiser.

The section given on Rawlinson's map shows the position of the seaward lighthouse, but there is a certain amount of error. It is represented at a certain number of yards of perpendicular distance from the shore line; whereas the line of distance formed an acute angle with the shore, so that the position of the old lighthouse was less remote. From a careful view of all the circumstances, its correct position is given by Mr. Hills as slightly within the shore line of 1771.

The old graveyard must be placed at about the same distance from the shore, if the newspaper account of its finding be strictly accurate; but as the distance from the shore is probably given with some looseness, we may reasonably suppose that it was further out. This impression is confirmed by the late Mr. Jesse Hartley's letter of April, 1846.

The testimony of Thomas Barclay, in December, 1827, was as follows:—

> "A lighthouse stood on the beach, to the northward of "the present one, nearly half a mile distant, if not altogether. "That lighthouse was long ago rendered useless by the "encroachment of the water, and it was pulled down. "The present one was built in 1763, and I assisted in "building it. At that time there was a high ridge of sand "hills and grass to keep off the tide, at a considerable "distance from the present lighthouse. The hills and grass "are now all gone, and there is nothing left to stop the "water, which is making rapid approaches inland."

IX. The Chat Moss Romance Examined and Refuted.

1. *Inherent Improbabilities.*

1. Is there no turf bog in Lancashire or Cheshire, but at Chat Moss? or, if there be, as there are, hundreds of square miles of it above ground and below the surface, is it not trespassing too far upon veracity on the one hand as well as

calculating too much upon credulity on the other, to assume that all which we see is an emanation from Chat Moss ?

2. The illustration respecting floculent matter from the dye works at Warrington being seen below Liverpool, will sustain only part of the burden which it is wished to lay upon it. We admit that heather and ling and possibly some portions of flow-moss might in like manner be floated to Ireland or even to the Hebrides; but the case would be very different with "rafts" of turf bog, loaded with "snags" of gigantic oak and fir trees, or one bearing on its bosom the remnants of a graveyard from somewhere in Winwick parish.

3. There is no evidence that a separate and separable stratum of turf bog, deposited on the sea shore by the tide, would be left there in perpetuity; like a boulder from an iceberg—a monument of the deluge which brought it there. On the contrary, there are numerous evidences that any such stratum would be rapidly broken up and dispersed. (1) Mr. Smith of Deanston, turned a river upon a turf bog, and floated it away into the sea, yet of the many acres of surface and cubic feet of matter removed, nothing was traceable after the occurrence of one or two tides. (2) In 1849, a large portion of a sandhill near Leasowe was blown away, and the bog below was torn up by the sea. It was deposited on the shore at New Brighton, but was effectually broken up and dispersed in the course of a few tides. (3) The two submarine forests, one near Leasowe and the other near Formby, have both almost disappeared; the "black braes," or great precipices of bog spoken of in 1828, exist no longer; and of the many hundreds of trees and tree-stumps which in 1815 were visible at Seaforth within the Mersey, probably not one remains. Owing to the increased value of land, the ingress of the sea is now prevented; so that we can hardly hope to see other portions of the subterranean forest uncovered. But, when it is assumed that such uncovered portions remain almost per-

petually *in statu quo*, no impression can be more entirely different from the fact.

4. We know that there were trees at Chat Moss, as in other turf bogs of the country; but there is no evidence that even one, or any considerable portion of one was ever floated down from it to the mouth of the Mersey. On the contrary, in the early half of the seventeenth century, there were "many thousands" at the "Meols Stocks" or Leasowe shore alone, apart from the many hundreds, probably thousands, which existed at the same time on the Lancashire shore.

5. Who ever heard of a burying-place being in flow-moss, in a wilderness which human habitations had only slowly approached; with water under the graves, and heath and *sphagnum* above and around them? Or if we suppose the fact to have existed, and that the entire cemetery was floated down to the mouth of the Mersey, how are we to account for the skeltons lying in an east and westerly direction? It is somewhat humiliating to have to advance opposing reasons to statements so gratuitous and unsupported, as well as so intrinsically absurd.

6. Even the hazel nuts which are found in large quantities in the black earth on both sides of the Mersey must have travelled from Chat Moss! What! were there not even bushes on any part of the banks of our noble river, during its course of twenty miles through a fertile district?

7. But it is argued, if one such flood took place, why may not two or three or any number? The whole hypothetical proposition is true; that is to say if we admit the former member, there is a measure of probability at least in favour of the latter. But the antecedent is false, and the consequent falls to the ground. No such flood as that which is described ever took place; though it is admitted that a small and unimportant inundation did occur.

2. *Physical Impossibilities.*

1. The whole of Chat Moss lay *below* the point where the eruption of foul water is said to have taken place; this water was that of a small rivulet; and instead of spreading itself over the land, it found an easy vent in the natural channels.

2. An area of turf bog, which Mr. Boult says was from twenty to twenty-four square miles, is supposed to have found its way down narrow and sluggish brooks, in the form of a "raft,"—or let us say several rafts. The actual size of Chat Moss in the time of Leland was about equal to the following ten townships in this locality; viz., Garston, Toxteth Park, Liverpool, Everton, Kirkdale, Bootle-cum-Linacre, Litherland, Great Crosby, Little Crosby and Walton. Let us try to realize a surface of this extent, moving like a gigantic ice-field, in one piece, or even in ten sections, down a channel—for it can hardly be called a stream—about the width of Bold Street! I can appreciate a vivid fancy, but surely History and Romance should be kept each in its proper place. And even in productions of the latter class, we expect that some respect will be paid to reason and probability.

3. Inasmuch as the stratum of turf bog which "crops out" on the sea coast, extends over several hundreds of miles of the adjoining land, sometimes under the surface and sometimes forming it, the Chat Moss hypothesis fails unless there were several such inundations, and unless the various rafts were miraculously deposited side by side,* nine-tenths of them far beyond the range of the highest spring tide.

4. Those who have ever observed the course of the Mersey from the confluence of the Glazebrook, along the whole southern boundary of the parish of Warrington, must be

* This suggestion has actually been made as a supplement to the hypothesis! It should be borne in mind that there is not evidence of a single square yard of bog from Chat Moss having been deposited anywhere.

aware that the passage of a single large tree is quite, or all but, physically impossible. In a distance which is seven miles by the road, the windings of the river make nearly fourteen miles; and in more than one instance the water almost completes an irregular circle. The alluvial matter deposited at these points forms what are called in provincial English by the various names, *eas*, *aits*, *holms*, *inches* or *islands*, though actually peninsulas. No amount even of dexterous steering could guide a large mass of timber through all these numerous and intricate circumvolutions; though if we only suppose it safely floated down to Fiddler's Ferry or Runcorn, its future passage would be easy. I am afraid that the flotation of tombstones would be still more difficult, though for a different reason; and that even skeletons and fibulæ could not be expected to enter the Rock Channel in safety.

5. If a territory like that which Mr. Boult supposes, had moved off to the sea, say only to the extent of nine feet in thickness, there would have been a chasm left of more than eighteen millions of cubic yards. As it was not the denudation of a hill, but the creation of a hollow, the surrounding drainage would soon have filled it, and the site of the eruption would have been occupied by a lake. But to this we find no allusion, and of it there are no traces.

3. *Important Facts.*

[A] The etymology of the name *Dove* Point is deserving of more attention than it has received. The term is Celtic and simply means *black;* while one of the names applied to the same spot at the present hour, is the Black Earth. The locality was described by the same term, therefore, before Saxon Dane or Norman had settled in the neighbourhood; there was black earth there, or turf bog with its imbedded trees, centuries before Leland was born, and before St. Chad had given his name to Chat Moss, if such indeed be the origin of the latter term. The idea, therefore, of the sub-

marine forest having originated about three centuries ago, is absurd.

[B] In March 1850, I reckoned so many as 538 stumps of young trees, which had evidently formed an artificial plantation. They were all below the action of the tide, and they stood in rows five yards apart. They may have been denuded of the bark, and some of the outer timber may have decayed; but there were few of them of more than four inches in diameter. There is evidence that similar plantations existed on the Lancashire coast near the mouth of the Alt, probably several centuries ago; for the trees were found in some places at regular distances, and in others those of one kind were found together. Whatever origin we are to assign to them, therefore, it is clear that we cannot derive them from Chat Moss.

[C] The hypothesis alleges that repeated settlements of turf bog, from Chat Moss or some such fertile source, probably gave origin to the coal measures in this part of the country; and this portion of it scarcely requires a reply. Yet it is important to notice that underneath Chat Moss itself is one of the most important coal beds in the county; and it will not be urged that the upper stratum, such as is visible to us, insinuated itself beneath various other beds placed in the same vertical line. The following is a statement in some detail.

"In regard to the coal mines under Chat Moss, I may "observe that the whole of the Worsley series of mines are "supposed to exist under the Moss. The four-feet seam at "Patricroft pit is 440 yards deep, and, I believe, the same "mine on the Moss, (say at Barton Moss Station,) would be "near 900 yards deep, if no fault comes in from the 'deep' "to interfere with the regular dip of the mine. Below the "four-feet mine, all the others,—sixteen in number,—should "be there in their regular order. The bottom one, the

"Daubhill mine, would be about 900 yards below the four-
"feet mine; or, say 1,800 yards from the surface to the
"Daubhill mine on Chat Moss."*

4. *What actually did occur.*

The original manuscript of *Leland's Itinerary* consists of several volumes, all of which are deposited in the Bodleian Library, Oxford. The printed form of the work follows a transcript which was made by Stowe, and which was sufficiently accurate for all practical purposes. For example, words written in contracted form are expanded; Roman numbers are expressed in Arabic numerals; and remarks in the margin are sometimes incorporated with the text.

When Hearne, the Antiquary, undertook to edit the work for publication, a good many leaves had slipped or been removed from their places; and as their restoration was difficult, these loose leaves were bound up in a separate volume. Accordingly, in following Stowe's copy the whole work, or nearly the whole, was given; and as the volume of loose leaves was also printed, several passages were given in duplicate. The quotation on which Mr. Boult's paper was founded is one of these. In the first three editions of the book it appeared twice—once at its proper place as in Stowe's transcript, and again in the supplementary volume at the end. In the editions subsequent to 1769, these duplications are omitted.

The copy of Leland which belonged to the Liverpool Library has disappeared, and it was not without great difficulty that the printed copy could be consulted, for verification of the quotation. I found a wide disparity between Mr. Boult's version and the printed one, even in the very copy† from which

* Private Letter from James Ridyard, Esq. See also Table of Sections by Joseph Dickenson, F.G.S., explanatory of his paper read at the Manchester Geological Society, 31st March, 1863.

† That in the Library of the Athenæum, Liverpool.

it is alleged that his extract is taken; but with the object of avoiding all quibbles and excuses based upon varying editions, I procured a transcript of the actual page. The passage in the original, as shown by the fac-simile, stands thus:—

47 + LANCASHIRE.

Westerbyshire

Firre Wood in Chateley Mosse.

Chateley more in Darbyshire is a iij or iiij mile in bredthe.

Gleasebroke riuer cummith with in lesse then a mile of Morley hawle.

There be xij paroche chirchis in Darbyshi[re] but they be large.

WINWIKE.

Winwike personage hath a parke and is a ij or iij mile from Werington.

Flete and a nother broke or ij cummith in to Gleasebrooke and Glasebrooke goith in to Mers[ey]

Dugles ryuer cumming by Wigan mark[ett] goith in to the se by hit self toward latham

Chateley more a vj mile yn lenght sum [way] brast up with in a mile of Morley haul and [de] stroied much grounde with mosse therabou[t] and destroid much fresch wat[r] fische th[er] abowt firste corrupting with stin[k]ing wat[r] Glasebrook and so Glasebrook car[ried] stinking wat[r] and Mosse in to Mersey water, and marsey corruptid carri[ed] roulling the ∧ mosse part to the shores of Wa[les] part to the Yle of Man and sum in to Ireland. In the very toppe of Chatemore where the mosse was hyest and brake is no[w] a fair plain valley as was in tymes paste, an[d] and a rille runnith in hit and peaces of smaul trees be founde in the botom.

It is mentioned elsewhere that Mr. Leland, of Morley Hall, burns turf only, as Chat Moss is within less than a mile of the house; and the author adds incidentally, in reference to the fact just noticed, that "with breking up of *abundance* "*of water* yn hit, (it) did much hurte to Landis thereabout, "and Rivers with wandering Mosse and *corrupt water*."

47. ✠

Lancashire.

Fitke Woodcha
in Chakley. iiij.
mosse.

Winwike

it is alleged that his extract is taken; but with the object of avoiding all quibbles and excuses based upon varying editions, I procured a transcript of the actual page. The passage in the original, as shown by the fac-simile, stands thus:—

47 + LANCASHIRE.

Westerbyshire

Firre Wood in Chateley Mosse.

Chateley more in Darbyshire is a iij or iiij mile in bredthe.
Gleasebroke riuer cummith with in lesse then a mile of Morley hawle.

There be xij paroche chirchis in Darbyshi[re] but they be large.

WINWIKE.

Winwike personage hath a parke and is a ij or iij mile from Werington.

Flete and a nother broke or ij cummith in to Gleasebrocke and Glasebrooke goith in to Mers[ey]

Dugles ryuer cumming by Wigan mark[ett] goith in to the se by hit self toward latham

Chateley more a vj mile yn lenght sum [way] brast up with in a mile of Morley haul and [de] stroied much grounde with mosse therabou[t] and destroid much fresch wat[r] fische th[er] abowt firste corrupting with stin[k]ing wat[r] Glasebrook and so Glasebrook car[ried] stinking wat[r] and Mosse in to Mersey water, and marsey corruptid carri[ed] roulling the ʌ mosse part to the shores of Wa[les] part to the Yle of Man and sum in to Ireland. In the very toppe of Chatemore where the mosse was hyest and brake is no[w] a fair plain valley as was in tymes paste, an[d] and a rille runnith in hit and peaces of smaul trees be founde in the botom.

It is mentioned elsewhere that Mr. Leland, of Morley Hall, burns turf only, as Chat Moss is within less than a mile of the house; and the author adds incidentally, in reference to the fact just noticed, that "with breking up of *abundance* "*of water* yn hit, (it) did much hurte to Landis thereabout, "and Rivers with wandering Mosse and *corrupt water*."

47. ☩

Lancashire

Ficke wood in Chatley mosse. — Woodd hateley more in ~~Darbyshire~~ Westemryshire is a ij. or iij. mile in bredthe.

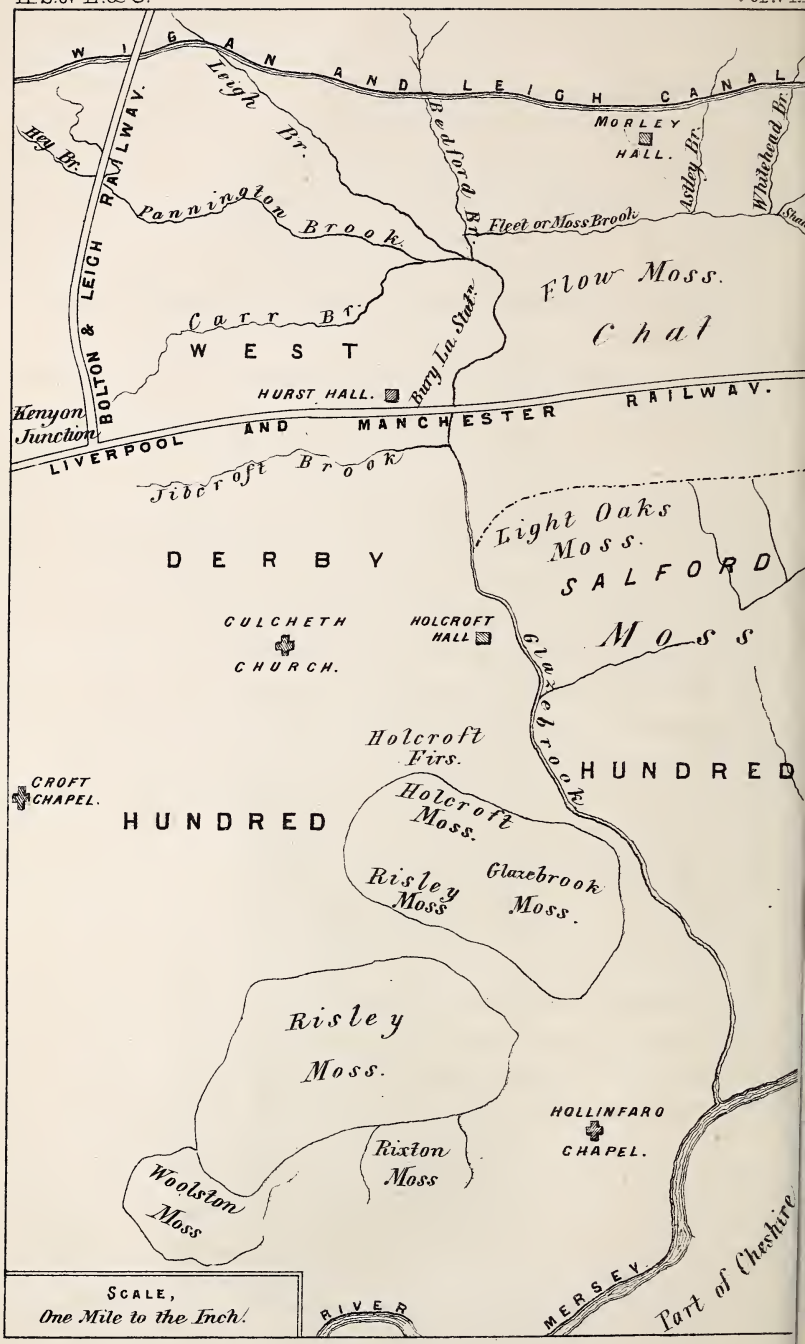
Glesbroke ~~Glesforde~~ river cumith thens in lesse then a mile of Morley haulle.

There be but xij. paroche chirchis in Darbyshi= but they be large

Winnike — Winwike personage hath a parke and is a ij. or iij. mile fro Werington

Flete and a nother broke or ij. cummith into= Glesbrooke and Glasebrooke goith in to Mer= Duyles ryver cumming by Wigan mark= goith in to the se by hit self torwara= Latham

Chateley more a vj. mile yn lenght su= brast up within a mile of Morley haul. and= and destroied much gronde with mosse therabo= and destroied much fresch wat= fische therabout first corrupting with stinking water Glasebrooke and so Glasebrook car= stinking water and mosse in to Mersey water and Mersey corruptid cari= the roulling mosse part to the shores of Wa= part to the Isle of Man and sum in= Ireland. In the very toppe of Chatemea Where the mosse was hyest and brake is no a fair plaine valley as in tymes paste and a rylle runnith in hit. and peaces of smaul trees be found in the botom.



SITE OF THE CHAT-MOSS FLOOD.

He also adds:—

"Sir John Holcrofte's house, within a mile or more of "Morle, stood in jeoparde with fleting of the Mosse."

Let us assume that Leland's statement is in no respect exaggerated, and the facts are fully before us. But what do they actually amount to? Even without a reference to the map, but especially with it before us, the following inferences are obvious.

1. In the time of Leland, Chat Moss was about six miles long and from three to four broad.

2. Morley Hall, the residence of a Mr. Leland, lay above it near the hills, and within less than a mile of its outer margin—"the top of the mosse."

3. A circle described with Morley Hall as centre, and having a radius of a mile, passes through the "Flow Moss" only; and intersects several rivulets as well as Glazebrook, to which they are all tributary.

4. The eruption took place at a *point* therefore, not *over an area*, and we can determine that point within very narrow limits.

5. It was probably near the confluence of the Fleet and the Bedford Brook, for several streams were corrupted by the black water; and this is near the spongy moss, which was least consolidated and most easily disrupted.

6. Before narrating the facts, Leland gives us the geography of the neighbouring streamlets, as if introductory to the narrative; and he does so as if it were necessary, though slightly interrupting the continuity of his description of Chat Moss. Even the account of Douglas river is not out of place, for it rises in Aspull Moor, from which the principal tributary of the Glazebrook issues.

7. He speaks mainly of an outburst of foul stinking water, as was natural; though there must have been small portions of "roulling mosse," and to this allusion is made.

8. The locality of the eruption was the bed of "a rille;" and the site of it after the foul matter had cleared away was "a plaine valley."

9. This had been its former condition; so that the small pieces of wood and growing moss had accumulated in its course, during a few previous years; till *they were at last burst up by hydraulic force, and the little stream cleared its own channel.*

10. Sir John Holcroft's house was Hurst Hall, near the modern railway, though another branch of the family resided at Holcroft Hall, lower down, on the right bank of the Glazebrook.

The reader will judge for himself whether these are or are not fair deductions from the plain narrative; and if they be so, it is difficult to describe the mountain of exaggeration which has been piled up on such a molehill of fact.

5. *Detailed Process of Exaggeration.*

1. Leland relates a passing occurrence, a cause of surprise to the people of Winwick parish, and interesting as connected with the residence of his friend. Mr. Boult inflates it into one of the most important occurrences of the age or country: and pretends to explain by means of it, thousands of facts of the deepest interest, and into which men of science desire to look. A speck of matter forms a large soap bubble, glittering with the most beautiful rainbow colours, but this bursts on being gently touched.

2. Mr. Boult omits all the paragraphs relating to the position of the rivulets;—he treats the eruption as one of solid not of fluid matter;—and in his comments he ignores all reference to the "rille" in whose channel it had taken place, though he quotes the words.

3. The dimensions which Leland attributes to the whole of Chat Moss, Mr. Boult calmly transfers to the part disrupted; viz., six miles in length and three to four in breadth!

4. Even the area contained within these limits is strangely over estimated. If the figure were rectangular, it would amount to only twenty-one square miles; but it is known by experience that the area of an irregular figure seldom exceeds *half* of the rectangle contained by its greatest length and breadth. Hence, in the time of Leland the area of Chat Moss was about ten and a half square miles; or, according to Mr. Boult, the portion floated away was of that extent. Yet in his first paper he estimates it at twenty square miles, and in his second at twenty-four! The exaggeration in the one case is ninety-one per cent. and in the other one hundred and twenty-nine; and both the great and the greater exaggeration are referred to a wrong object. The bursting of water, mud and "slutch," in the course of a small rivulet, swells under dexterous manipulation, to a land slip of twenty-four square miles, altering the face of the sea for days or weeks, and of the land for generations and even centuries!!

5. The alteration of the text occurs in the following way:—

(1) It is said that the moss "*sum* [*way*]* brast up," &c., showing that the fact was local and partial. The words "*sum way*" are omitted, and of course a particular statement becomes a general one.

(2) Leland gives the breadth before the length, as if looking across the moss from his friend's house at Morley: Mr. Boult inverts the order, reducing it to modern form.

(3) Between the breadth and the length five paragraphs occur, without which the narrative cannot be understood. In Mr. Boult's version all these are omitted.

It would surely be an offence to the reader's understanding to suppose that any further remarks were required on this part of the subject.

* The word "way" is in Stowe's transcript only; it has been erased with other words, by the edge of the manuscript being frayed away.

[P.S.—On Saturday, June 23rd, 1866, I went over the ground in company with the Rev. T. P. Kirkman, F.R.S. I believe that we found the locality of the eruption, viz., near the junction of Fleet or Moss Brook with the Pennington Brook. During floods, the rise of the river is occasionally twelve feet and upwards, just below the confluence. It is not easy to say whether Hurst Hall or Holcroft Hall was endangered; as the former is identified by its distance from Morley, and the latter is less elevated above the surface of the brook.]

X.—Formby.

Let us now go back for a little in our inquiries, and consider the former condition of Formby, to which reference has been made more than once.

In 1849 I visited this place for the first time, and found no house near the site of the old Churchyard, and no traces of cultivation visible. Within its whole circuit there was not a tombstone to be seen except one laid upon a raised platform, with a riband of lettering round its outer margin. I afterwards learned that this one had been brought from York Minster because it commemorated the decease of one of the Formby family, and its elevated position alone preserved it from being covered. The surrounding sand was much higher than the graveyard, the latter showing signs of attention for the purpose of preservation; yet Mr. Boult says that the graveyard never was in any danger of being lost.

In Teesdale's map of Lancashire, surveyed in 1828-9, the sand is represented as quite enclosing the old graveyard and separating it from the inhabited and civilized portion of the district. Now this was the very year in which Mr. Kaye had referred to this old graveyard in illustration of the facts at Leasowe, and in which a writer at Birkdale had corroborated his statement. The evidence of the country people is that hundreds of times it would have been completely buried but for great exertions made by themselves. One man declares that hundreds of tons of sand were wheeled into it after some

storms, when the sweep of the west winds had left coffins bare; whilst at other times hundreds of tons were removed from it, when the direction of the wind had blown the sand into and over it. The former part of the statement shews that interments in it were still occasional.

If we go back to the year 1787, we find the late Rev. Robert Cort, who at his death in 1852 was "father of the diocese," acting as curate of Formby. In that year he visited, on his death bed, an old man, the last inhabitant of the deserted town. This person resided in a lone house on the verge of the burying ground, and he declared that in his youth this, his father's house, had stood in the centre of the town. He said that he had frequently jumped down, as a boy, from the pierhead to the decks of the ships that were loading in the harbour. This house was shortly afterwards removed.

If we go back still further, we find in 1743 a precept procured at Chester for the removal of the Church, and in 1746 the removal was actually complete, as we find by an inscription recorded over the door of the present Church. It was enlarged in 1830. It is distant from the old site a mile and a half. In the interval between these dates, namely in 1745, tradition says that some of the Scottish soldiers, on their way to Preston, were billeted in the "decaying" village of Formby.

In 1736 a ship was wrecked on the Formby bank, laden, as it is said, with tobacco; and Mr. Cort declared that, fifty years after, every person who came to speak to him in the vestry on Sunday, man woman and child, was smoking. The people attributed the universality of the practice to the abundance of tobacco after the stranding of the ship;* but it is not improbable that their low marshy situation may have created

* It is known that potatoes were introduced to England by the stranding of a ship, in the time of Sir Walter Raleigh, on Formby sands. For several generations Formby was celebrated for its excellent potatoes, grown in a mixture of turf bog and fine sand; and the quality of those still produced near Ormskirk and Burscough is esteemed excellent.

the appetite for a narcotic, as in the fens of Lincoln and Ely, and as in Holland. On Speed's map of Lancashire, 1610, Formby is marked as the western point, its distance from Denton on the east being thirty-one miles.

From these and other evidences the following inferences are clear :—(1) That a town and port existed on the extreme west, close to the channel. (2) That it was destroyed by the blowing sand, and rebuilt a mile and a half inland. (3) That this occurred a hundred and twenty years ago. Some of the sandy lanes are called "streets" to this day, as Church Street, Duke Street, Cable Street. There was also an old cross, the remains of which existed recently, near the railway station. This was probably the old market cross.

The former condition of the country is shewn by such facts as the following :—Martin Mere, in the neighbourhood, occupied an extensive hollow, covering an area of three thousand statute acres.* The parish of Sefton was nearly all flooded from the beginning of winter. The parish of Altcar, which contains four thousand two hundred and eighty-four acres, had only two hundred acres above the flood. Its Church is still approached by elevated causeways, which indicate its former condition. There were three smaller lakes in the parish of Halsall—the White Otter, the Black Otter and Gethim Mere. There was also another lake near Formby called Burton Mere, and another still, to the east of the old churchyard, called the Church Lake. Of these six lakes not one is in existence now. The last has long since been sanded up and its site is under cultivation, but the level fields and the elevated margin define its position almost as distinctly as when it was filled with water.

* On Saturday, 29th September, 1866, after the heavy rain of the previous day, a large portion of Martin Mere was covered with water. And in the course of the month, large districts were flooded in Croston, Mawdesley, Rufford, &c.

Passing over the ground in the spring of 1865, I witnessed the terrible dangers and occasional effects of the strong west wind. At the door of the little Church of St. Luke, erected in 1856 at the side of the old graveyard, the turf was completely torn up and the subjacent sand exposed. The vegetable productions in the gardens of the houses recently erected, required to be protected by high barricades, and the porch of the new parsonage was loaded with bricks to prevent it from being blown away.

In one of my examinations I was conducted by an old man called Tommy Rimmer, whose mother was then ninety-four years of age, so that her traditional information respecting the district reached back for a century and a half. The following opportunity occurred of testing a curious local tradition, and as it is not without interest in the neighbourhood, I give it in detail.

He stated that when the first dock was about to be dug at Liverpool there was great doubt as to whether Formby would not be the better place; but, under the impression, afterwards found to be erroneous, that Formby had not a good foundation, it was decided to make the port at Liverpool. The Corporation, running short of money, sent to the townsmen of Formby earnestly entreating them to lend them £50, and promising £3 annually as interest on the sum. The money was lent accordingly, and this sum, he declared, had been paid till lately to the town of Formby. On investigation, it appeared that in 1703 a sum of £50 had been bequeathed by Richard Marsh to the poor of Formby;—that in 1710 it had been lent under the first Dock Act;—that the rate of 6 per cent. was given in consideration of its being Poor's Money;—that it is paid to this hour to the people of Formby;—and that it is distributed in sums of 5s. and 6s. each about Christmas. There is a notice of it in the Report of the Charity Commissioners of 1828-9, but at that time its history

was not known, though it is called Marsh's Charity. The same benefactor bequeathed £400 for a school; and the land in which it was invested yielded £34 per annum in 1828. It will be noticed that there were four families named Marsh in the township, in 1679.

My conductor lives at Park House, and he showed me the place called the Park. It is now covered many feet deep with sand, but he declared that the tradition was quite distinct, of its having been a park before it was "blown out." He also shewed me another place in the same neighbourhood called Andrew's Gardens, or Bowers' Gardens, the explanation of which is the following:—About 200 years ago this spot was occupied by Andrew Brown (not Bowers). He had the finest orchards in all Lancashire, so that it was a treat to see the bloom of them in the spring or the trees laden with rich fruit in the autumn. But the sand came, the orchards were destroyed, and now nothing remains but the mounds of sand, tufts of star-grass and the traditional name. Both the Park and Brown's Gardens are in the portion of the township known as Raven's-Meols, a district mentioned in Domesday and formerly a considerable territory, but now greatly reduced by the sea, and the existing portion rendered useless by the sand.

In my researches, I discovered a document of great interest in the parish chest. It is a parchment roll, consisting of five separate strips, attached by thread, of the date of 1679. Its length is ten feet four inches, and the strips vary in width from five inches to five-and-a-half. The names of those in Formby proper terminate on the fourth slip, and the names of the inhabitants of the Park are given on the fifth. The blank spaces between the two and at the end, amount to nine inches in all. It is called "fformby ffifteene booke," or a Roll giving the names of the persons who paid the tax of

Formby ffifteene booke made the Twenty Third day of July in Anno ~~RR~~ ~~Oar~~ sec Tritissimo prin Anno domi 1679 /

Richard fformby Gentlman:	vj d		
[illegible]	[illegible]	[illegible]	[illegible]
Mary Aspinwall wid (two houses	ij d		
Thomas fformby	ij d	ob	[illegible]
John Longton	ij d	d	qr 0
Jane Longton	ij d		
John Christian	ij d	ob	[illegible]
James Horrell	2 j d	[illegible]	qr
James Horrell Greyory	[illegible]		0
John Whithead	ij d	ob	qr 0

was not known, though it is called Marsh's Charity. The same benefactor bequeathed £400 for a school; and the land in which it was invested yielded £34 per annum in 1828. It will be noticed that there were four families named Marsh in the township, in 1679.

My conductor lives at Park House, and he showed me the place called the Park. It is now covered many feet deep with sand, but he declared that the tradition was quite distinct, of its having been a park before it was "blown out." He also shewed me another place in the same neighbourhood called Andrew's Gardens, or Bowers' Gardens, the explanation of which is the following:—About 200 years ago this spot was occupied by Andrew Brown (not Bowers). He had the finest orchards in all Lancashire, so that it was a treat to see the bloom of them in the spring or the trees laden with rich fruit in the autumn. But the sand came, the orchards were destroyed, and now nothing remains but the mounds of sand, tufts of star-grass and the traditional name. Both the Park and Brown's Gardens are in the portion of the township known as Raven's-Meols, a district mentioned in Domesday and formerly a considerable territory, but now greatly reduced by the sea, and the existing portion rendered useless by the sand.

In my researches, I discovered a document of great interest in the parish chest. It is a parchment roll, consisting of five separate strips, attached by thread, of the date of 1679. Its length is ten feet four inches, and the strips vary in width from five inches to five-and-a-half. The names of those in Formby proper terminate on the fourth slip, and the names of the inhabitants of the Park are given on the fifth. The blank spaces between the two and at the end, amount to nine inches in all. It is called "fformby ffifteene booke," or a Roll giving the names of the persons who paid the tax of

ffornby ffifteene booke made the Twenty Third day of July in Anno ... Carol Sec: Tricessimo prim Anno domi 1679 /

Richard fformby Genthman:	vj d		
Phillip Morres howse	2 ij d	ob	
Ailes Rymer wid	j d		q
Rithard Sutton	iij d	[illegible]	[illegible]
Henry fformby	[illegible] d	ob	
John Junupt	j d		
Jane Sutton	j d		
margory fformby widi	j d		
An Abrahom	[illegible] d	ob	
Simkine howse	j d	ob	q
James Goore	j d	ob	q [10]
margary Rymer widi	2 d	ob	
Robt warton —	[illegible]	ob	q
margt Andoe widi	iij d	ob	q 0
Edward Tatlocke	ij d	ob	q
John Arnould for Hunt's house	ij d	ob	q 0
Edward Rymer	iij d	[illegible]	0
william Morres	j d	ob	q
Mary Aspinwall wid, two houses	ij d		
Thomas fformby	j d	ob	q
John Longton	j d	d	q 0
Jane Longton	j d		
John Ahristian	[illegible] d	ob	[illegible]
James Morres	2 j d	ob	q
James Morres Gregory	[illegible] d		0
John whithead	j d	ob	q 0

"Fifteenths" to the King. In borough towns the inhabitants paid one-tenth of the value of their moveables, and in smaller towns, unincorporated, one-fifteenth. The whole tax, however, was called a Fifteenth.* The roll is arranged, apparently, in order of locality, with the only "Gentlman," Richard fformby, at the top, and there are three parallel columns on the right side, for pence halfpence and farthings respectively. A halfpenny, where it occurs, is marked *ob.* (obolus), and a farthing *qr.* (quadrans). Occasionally, the sums to be charged are altered in a subsequent handwriting, the recent charge being smaller than the original one, the houses having diminished in value.

There are 199 names or entries in all, showing a population of about a thousand, and this, be it remarked, was 186 years ago. In 1801 the population was 1045, and it increased, during the decennial intervals to 1101, 1257, 1312, 1146, 1594, 1780. It is well known that the population of rural

* "*Fifteenth,*—in law a tax imposed on all personal property about the time "of Henry II, consisting of a real fifteenth part of all the moveables belonging "to the subject. Of a similar nature were *tenths*, which are said to have been "first granted under Henry II, who took advantage of the fashionable zeal for "Crusades, to introduce this new taxation, in order to defray the expenses of a "pious expedition to Palestine, against Saladin, Emperor of the Saracens;— "whence it was named 'the Saladin tenth.' The land tax, in its modern shape, "has superseded the above methods of rating property."—*Craig's Dictionary.* "For this gift and grant by the King, of the liberties contained in this great "Charter, and of others contained in the King's charter of liberties of the Forest, "the Archbishops and Bishops, Abbots, Priors, Earls, Barons, Knights, Free- "holders, and others the King's subjects citizens and burgesses, (assembled in "Parliament,) gave unto the King *one-fifteenth;* which proveth that as the "fifteenth was granted by Parliament, so was the great Charter also granted by "authority of the same. But, since this time, the manner of the fifteenth is "altered; for now the fifteenth, which is also called the Tack, is not originally "set upon the polles, as at this time it was, but now the Fifteenth is certainly "rated upon every town. And this was by virtue of the King's commissions "into every county of England, in the time of Edvd. III, taxations were made "of all the cities boroughs and towns in England, and recorded in the Exchequer, "and that rate was at that time the fifteenth part of the value of every town, and "therefore retaineth the name of the fifteenth still."—*Coke's Institutes, Part II, cap.* 38, "*Magna Charta.*" "The Fifteenth is used where a fifteenth or a tenth is "granted to the King's majesty by Act of Parliament."—*Yates (County Treasurer),* 1716. At this date, in a County Lay, if 9s. were assessed on the ancient Parish of Walton, Liverpool paid 2s. and Formby 1s. This was thirty-seven years after Formby Roll had been compiled, in which time Liverpool had trebled its property and population.

districts increases slowly; for example, if we reduce the population of 1851 by 31 per cent. we have that of 1801. Reducing by a similar per centage for each period of fifty years, we find that even at this slow rate of increase, 443 persons in 1679 should have given us the present population:—or the actual population of 1679 should have given us about 4000 at the present day. This is conclusive evidence of the decay of the place, notwithstanding its recent revival; a flourishing port and blooming gardens having become a wilderness.

I have thrown the names of the roll into alphabetical order, and have thus constructed what I believe may be called the first directory in the North of England. Gore's Directory, published originally in 1766, is now only a century old, but this one claims precedence of it by 87 years. The names which occur most frequently are the following, given here in the order of their frequency:—Rimmer (invariably spelt Rymer), Norris, fformby, Blevine, Brown, Aindoe &c. The occurrence of Rimmer in the neighbourhood is extremely common to the present hour; Norris is occasional; and Formby is the name of the family owning the locality, a circumstance which is unusually common in Lancashire.*

* In Lancashire an unusually large number of landed proprietors have taken their surnames from their possessions: and hence, nearly every township in the county is, or at least was identical in name with a county family. This fact has often been noticed. "In Lancashire, Cheshire, and the other northern parts, "families called themselves after the names of their towns."—*Camden.* "Most "of the heads of families in Lancashire formerly bore the same name as the town "or estate."—*Gregson's Fragments*, in which ninety-four examples are given, as Ashton of Ashton, Bamford of Bamford, Croston of Croston, &c. "The "landed proprietors are in every country the natural nobility; hence, in the "opinion of the genealogist, those families who are named alike with their estates, "are the noblest families in their respective provinces."—*Sir James Lawrence.* This applies to French and British-Norman families with the prefix *de*, as De Clifford, De Ferrars; to German families with the prefix *von* and *zu;* and to Scottish families of that *ilk*, viz., of that *same* (name). In the Formby list, the local family is Formby;—and the others are either immigrants or called by non-local names. But in the documents belonging to Whalley Abbey, referring to this part of the country, we find the names of the following landed gentry or their relatives attesting as witnesses:—Adam de Molyneux, Henry de Walton, Adam de Heynolesdale [Ainsdale], Richard de Lathom, Richard de Hoton, Richard de Wallys [Wales], Simon de Halsall, Walter de Scaresbreck, Roger de

A further confirmation of tradition is found in the following:—The roll contains the names of fifteen persons resident in the Park, and from the sums which they pay it is evident that they are all persons in comfortable circumstances. Also Brown is a frequent name, and of the fifteen residents in the Park three are Browns.

Tradition further declares that the bricks forming the houses of the old town had not been moulded, but were made by hand, like the ordinary turf, baked from semi-fluid mud. It is also alleged that some of these are turned up occasionally among the sand. Certain it is, that at the Grange farm, part of the building of which has occupied the position for 500 years at least, some of the bricks are very irregular in form and appear to have been imperfectly moulded. This house is alluded to in the Coucher Book of Whalley Abbey, under the date 1290.

The surnames being so few in number, and some of them of such frequent occurrence, it has for a long time been necessary to adopt additions or sobriquets as in other parts of the country. These are sometimes used in the Church books and in other official records. Thus we have in the vestry books "John Rimmer (*vulgo* 'Black')," "John Sutton (*vulgo* 'Neighbour')," "John Rymer ('Ranty')," &c. Others of the Rimmers were called "de Cross," "Margaret's," "Butcher," "Roper," "John's," "Luck," "Slack" &c. My guide among the sandhills is currently known as "Old "Chelse."*

Derby [West Derby], Galfred de Dutton, Robert de Samlesbury, Robert de fformby, Roger de Hibernia [Ireland of Hutt], Adam de Gerstan, Henry de Thornton, Henry de Torbock, Galfridus de Chetham, Thurstan de Holand [Upholland?], Gervase de Ynes, Robert de Hulton, Robert de Eueryk [York], William de Ayntree, Roger de Upton, William de Meles, Adam de Crosseby Petrus de Leyland, Ricardus de Hoghton, Gilbert de Sotheword [Southworth], Thomas de Osbaldeston, Adam de Clogh, Roger de Toxtath, Matthæus de Haydok, Galfred de Hecleston, Paulinus de Gayrestang, Ricardus de Baldreston. There are many other illustrations of the principle, but these may suffice.

* For examples in the Roll, see James Norres, John Rymer, Richard Rymer, William Rymer.

In connection with the names of persons, a few words may be mentioned respecting names of places. Altcar is the Car or marshy place amongst the alders of the river Alt. It has nothing whatever to do with the Saxon *Cyrnan*, to turn. The word Car is given in the glossaries of Forby, referring to East Anglia, of Carr, referring to Craven, of Brockett, Baily, Halliwell &c. In *Tim Bobbin*, a "Carry plack" is represented as a "boggy place, where water leaves a red sediment." Similarly, in Cheshire, near Hoylake, we have Newton Car, and the Car Lane, Car Side, Car Houses &c.—"Ince" simply means the Island, like "Ennis," "Inch," "Ynis" &c. The township of Ince Blundell, therefore, is Blundell's island.—Such names as Gorsy Lane and Sandy Lane explain themselves, and Crossans, beyond Southport, means across the sands.—A place near the mouth of the Alt, known as Balling's Warp or Wharf, is supposed to be the Ballast Wharf, or the place where vessels trading with Formby threw out their ballast.

In the 13th century a place near little Crosby was called Pul and Skippul, referring to a small brook that discharged itself in the locality. We have still the name Scaffold Lane preserved, which ought to be Skippul Lane.—Shire Lane is the division lane or border between two townships, but of late years a new boundary has been struck out, which has superseded it.—Harkirke, where coins are said to have been procured, is in the neighbourhood, though its existence was at one time doubted.

There are numerous other subjects, either approximately or remotely allied with these, which abound in interest. Such are an investigation respecting Ravens-Meols,* and the supposed village of Altmouth; also the history of the Grange. I fear, however, that I have exceeded my limits in space, if not the patience of those who have heard and those who shall read.

* Also spelled *Ravers Meols.*

DIRECTORY

For the town of Formby, an outlying portion of the Parish of Walton-on-the-Hill. Compiled from the "fformby ffifteene-booke," or Roll for the Collection of Fifteenths, 1679.

Aindoe, Jane, widᵂ	vjᵈ	ob	...
,, John	jᵈ	ob	...
,, John, Ainsdalle	jᵈ	...	qʳ
,, Margᵗ, widᵂ	iiijᵈ	ob	...
,, William	iijᵈ	...	...
,, William, the Parke	jᵈ	...	...
Abraham, An	ijᵈ	...	...
,, James	jᵈ	...	qʳ
Ambrose, John	ijᵈ	...	...
Arnould, John, for Huntʳˢ howse	ijᵈ	ob	...
Aspinwall, Mary, widᵂ, two howses	ijᵈ	...	qʳ
Ashton, Jane, widᵂ	iiijᵈ	...	qʳ
Barton, Ralph	ijᵈ	...	...
Beckonson, Jane, widᵂ	jᵈ	...	...
Birch, Ellin	jᵈ	...	...
,, Ellin	jᵈ	...	...
Blevine, James	iijᵈ	ob	...
,, James	jᵈ	...	...
,, John	ijᵈ	ob	...
,, William, howse	ijᵈ	...	...
,, William, Junʳ	jᵈ	...	...
Blundle, Thomas	iiijᵈ	...	...
Bradley, Thomas	jᵈ	...	qʳ
Bradshaw, Margery, widᵂ	jᵈ	ob	...
Brethwitte, John	ijᵈ	...	...
Brown, Edward	iijᵈ	...	...
,, Elizabeth, the Parke, for bailiues	...	ob	...
Browne, Elizabeth, the Parke	jᵈ	...	...
,, Elizabeth, widᵂ	jᵈ	...	...
,, Elizabeth, widᵂ, for Goore's, the Parke	jᵈ	...	...
,, Richard, *(see James Norres)*	...	...	...
,, Thomas	jᵈ	ob	qʳ
,, Thomas	iiijᵈ	...	...
,, Thomas	iijᵈ	...	...
,, William	ijᵈ	...	...
Bushell, Willᵐ	jᵈ	...	...
Christian, John	jᵈ	...	qʳ

Croft, Thomas	j^{d}	...	...
Dobb, Edward	j^{d}	ob	...
,, Jane, wid^{w}	j^{d}	...	...
,, Richard	j^{d}	...	...
,, Richard	j^{d}	ob	q^{r}
,, Thomas	ij^{d}	ob	q^{r}
fleetwoode, An	j^{d}	...	q^{r}
,, James	j^{d}	...	q^{r}
,, Thomas, or Katherine Marsh	j^{d}	...	...
fformby, Cuthbert	v^{d}	...	...
,, Margery, wid^{w}	j^{d}	...	...
,, Margery, wid^{w}	ij^{d}	ob	...
,, Richard	v^{d}	ob	...
,, Richard, Gentlman	vj^{d}	...	...
,, Robert	vij^{d}	...	...
,, Thomas	ij^{d}	...	q^{r}
fformbye, Henry	j^{d}	...	...
ffrench, Elizabeth, wid^{w}	ij^{d}	...	...
Gilbertson, Richard, for Willm Rymer's, the Parke	...	ob	...
Goore, James	j^{d}	...	...
,, Richard	j^{d}	ob	...
Goores, William	j^{d}	...	q^{r}
Greene, Nicholas	vj^{d}	ob	...
Halsall, Edward	ij^{d}	...	q^{r}
Halsall, howse [the]	j^{d}	...	...
Harrison, John	ij^{d}	ob	...
,, Richard	iij^{d}	...	...
,, Richard	ij^{d}	...	...
Hudson, An	j^{d}	...	...
Johnson, Emlin, the Parke	ij^{d}	...	...
,, John (uxor)	iij^{d}	...	q^{r}
,, Willm, Clark	j^{d}	ob	q^{r}
,, Willm	j^{d}	ob	...
Jumpe, Gilbert	ij^{d}	...	...
,, John	j^{d}	ob	q^{r}
,, John	j^{d}	...	...
,, Richard	ij^{d}	...	...
,, Willm, Ainsdalle	ij^{d}	ob	...
Kenion, John	j^{d}	...	q^{r}

Liuesley, An	j^{d}	ob	...
,, Richard	...	...	q^{r}
Longton, Jane	ij^{d}	...	...
,, John	ij^{d}	...	q^{r}
,, Richard	j^{d}	...	...
,, Robert	j^{d}	...	...
Leadbett^{r} Elizabeth	j^{d}	ob	...
,, Katherin	j^{d}	...	...
,, Peet^{r}	j^{d}	...	...
Lunt, Willm	j^{d}	...	...
Marsh, Willm	ij^{d}	ob	...
,, Hugh	j^{d}	...	...
,, Elizabeth, wid^{w}	j^{d}	ob	...
,, Katherin, *(see Thos. fleetwood)*	...	...	...
Mathew, James	ij^{d}	...	...
,, John	iij^{d}	...	...
,, John	j^{d}	...	...
,, John	iiij^{d}	ob	...
Neale, Pearz	j^{d}	...	q^{r}
Norres, Elizabeth, wid^{w}	iiij^{d}	...	...
,, Gilb^{t}	ij^{d}	...	q^{r}
,, Gilbert	ij^{d}	...	...
,, Henry, Senr	ij^{d}	...	q^{r}
,, Izabell, wid^{w}, Ainsdalle	...	...	q^{r}
,, James	vj^{d}	ob	q^{r}
,, James, his Lande	vij^{d}	...	...
,, James, for Richd Browne's howse	j^{d}	...	...
,, James, Gregory's	v^{d}	...	...
,, Margery, wid^{w}	j^{d}	...	...
,, Mary	j^{d}	...	...
,, Philip's howse	vij^{d}	ob	...
,, Richard	iiij^{d}	ob	...
,, Richard, Ainsdalle	...	ob	...
,, Thomas	v^{d}	...	q^{r}
,, Thomas de Holland	j^{d}	...	...
,, William.	ij^{d}	...	...
Parr, Roger	j^{d}	...	...
Rice, Edward, the Parke	ij^{d}	...	...
,, Jenett	j^{d}	...	...
Richardson, Katterin	ij^{d}	ob	q^{r}
,, Margaret	j^{d}	...	...
Rydinge, An	ij^{d}	...	...
,, Cecilly, wid^{w}	j^{d}	...	...

Rydinge, Ellin the Parke	j^{d}	...	...
,, John	ij^{d}	ob	...
,, Richard	iiij^{d}	...	q^{r}
Rynwyld, James	ij^{d}	...	...
,, James, the Parke	j^{d}	...	...
Rymer, Ailes, wid^{w}	j^{d}	...	q^{r}
,, Ailes, wid^{w}, Ainsdale	j^{d}	...	...
,, An, wid^{w}	j^{d}	...	...
,, An, wid^{w}	j^{d}	...	...
,, Dorothy, Ainsdalle	...	ob	...
,, Edward	iij^{d}	...	...
,, Elizabeth, wid^{w}	ij^{d}	...	...
,, Elizabeth, wid^{w}	j^{d}	...	...
,, Elizabeth, wid^{w}, de Birkedall	ij^{d}	ob	...
,, Ellin, wid^{w}	iiij^{d}	...	...
,, Gilbert, Senr, Ainsdalle	j^{d}	...	...
,, Gilbert, Junr, Ainsdalle	j^{d}	ob	...
,, Hugh	ij^{d}	ob	...
,, Izabell	iij^{d}	ob	...
,, Jane, for breadhowse	j^{d}	ob	...
,, John, Carpent^{r}	j^{d}	...	q^{r}
,, John, Crosse howse	ij^{d}	...	...
,, John de Milne, Ainsdalle	iiij^{d}	...	...
,, John, Owner	j^{d}	ob	q^{r}
,, John, Maries	j^{d}	ob	...
,, [John ?] Toms, Ainsdalle	...	ob	q^{r}
,, John	j^{d}	...	q^{r}
,, John	ij^{d}	ob	q^{r}
,, Lawrence	ij^{d}	ob	q^{r}
,, Lawrance	j^{d}	...	...
,, Margery, wid^{w}	v^{d}	ob	...
,, Mary, wid^{w}	ij^{d}	ob	...
,, Mary, wid^{w}, the Parke	j^{d}	...	...
,, Richard, Caterer	iij^{d}	...	q^{r}
,, Richard, Caterer, the Parke	ij^{d}	...	...
,, Richard, Gilb^{ts}	j^{d}	...	q^{r}
,, Thomas	j^{d}	...	...
,, William, *(see Richard Gilbertson)*	...	...	...
,, William, Dowse	ij^{d}	...	...
,, William, Rob^{ts}	ij^{d}	ob	q^{r}
,, William, Webst^{r}	j^{d}	ob	...
,, William, bailive	vj^{d}	ob	...
,, William, howse	ij^{d}	ob	...
Scarisbricke, Willm	iij^{d}	...	...
,, Willm	j^{d}	ob	...

Shorlicar, James, for Blevine, the Parke	j^{d}	...	...
Simkins howse	j^{d}	...	q^{r}
Sumer, An	j^{d}	...	...
Sumner, Ellin	j^{d}	...	...
Sutton, An, wid^{w}	iij^{d}	...	...
,, Christopher	iij^{d}	...	...
,, Elizabeth, wid^{w}	...	...	...
,, Ellin, wid^{w}	ij^{d}	...	...
,, Jane	j^{d}	...	...
,, John	ij^{d}	ob	...
,, Richard	iij^{d}	ob	...
,, Richard	iiij^{d}	...	...
,, Thomas	j^{d}	...	...
,, Thomas	iij^{d}	ob	...
Tatlocke, Edward	ij^{d}	...	...
Thelwall, Henry	ij^{d}	ob	...
Tyrer, Willm	iij^{d}	ob	q^{r}
Vallentine, Katterin	j^{d}	ob	...
Vose, John	j^{d}	...	...
Warton, Elizabeth	iij^{d}	...	...
,, Robert	v^{d}	...	...
,, Robert	j^{d}	...	...
,, Thomas	iij^{d}	ob	...
,, Thomas, Ainsdalle	j^{d}	ob	...
Wignall, Willm	j^{d}	...	...
,, Willm	j^{d}	...	...
Whithead, John	ij^{d}	ob	...
Whitside, Margery	j^{d}	...	...
Williamson, Robert	iij^{d}	ob	q^{r}
Winstanley Tenem^{t}, [the]	iiij^{d}	...	...
Wright, Edward	j	...	...
,, Jane, wid^{w}	j^{d}	...	...
,, Richard	j^{d}	...	...
,, Richard	j^{d}	...	...
Yonge, Jenett	ij^{d}	...	q^{r}

NOTE.

1. *Names.*—The name Rymer occurs thirty-eight times; Norres seventeen times; Sutton ten times; Browne eight times; fformby seven times; Aindoe six times; Blevine, Dodd, Jumpe, Rydinge and Warton five times each; Johnson, Longton, Marsh, Mathew and Wright four

times each ; ffleetwoode, Harrison, and Leadbett[r] three times each. The following eleven names occur twice each: Abraham, Birch, Brown, Goore, Halsall, Liuesley, Richardson, Rice, Rynwyld, Scarisbrick, Wignall. Thus, thirty surnames occur a hundred and sixty-two times in all. The remaining thirty-seven occur only once each.* The whole number of surnames, therefore, is sixty-seven, and of persons named a hundred and ninety-nine.† Some of these are only varieties of the same name, as Brown, Browne; fformby, fformbye; Goore, Goores; Sumer, Sumner.

2. *Condition.*—Only one is recorded as a gentleman; the remainder were people of a lower grade. There were Males a hundred and thirty-four, Females sixty-one;—of the latter thirty were widows. There were four doubtful.

3. *Payments.*—So many as a hundred and twenty-eight persons, or two-thirds of the whole, paid only 14s. 7d. jointly, or an average of a little more than $1\frac{1}{4}$d. None of them paid more than $2\frac{1}{4}$d. On the other hand, seventeen persons, or about one-twelfth of the whole, paid 7s. $11\frac{1}{2}$d, or an average of nearly 6d. The whole payments amounted to 35s. 8d., a sum which evidently did not represent the capabilities of a hundred and ninety-nine people.

* Ambrose, Arnould, Aspinwall, Ashton, Barton, Beckonson, Blundell, Bradley, Bradshaw, Brethwitte, Bushell, Christian, Croft, fformbye, ffrench, Gilbertson, Goores, Greene, Hudson, Kenion, Lunt, Neale, Parr, Simkin, Sumer, Sumner, Shorlicar, Tatlock, Thelwall, Tyrer, Valentine, Vose, Whithead, Whitside, Williamson, Winstanley, Yonge.

† Some of the persons appear to be twice named; but the instances are few, and the Reader can make allowance in estimating the population.

FURTHER OBSERVATIONS ON THE ALLEGED SUBMARINE FORESTS ON THE SHORES OF LIVERPOOL BAY AND THE RIVER MERSEY.

In reply to Dr. Hume's communication of 10th July, 1865.

By Joseph Boult Esq., F.R.I.B.A.

(Read 9th November, 1865.)

In a communication to this Society on 10th July last, the Rev. Dr. Hume has controverted the opinions on this subject which I expressed in a paper read before the Polytechnic Society on 10th April, and published in the Journal of that Society. I regret to find, from the tone of his communication and from conversation with him, that the Rev. Doctor has felt the observations I felt called upon to make upon portions of *Ancient Meols,* and upon the writings of other gentlemen, to assume the character of a personal attack upon himself. This I beg to disclaim altogether. My object in making that communication was to correct an impression which seemed to me very erroneous, but which was gradually becoming an accepted opinion. To this end I made use of *Ancient Meols* as the most recent publication on the subject, containing a comprehensive and convenient summary of all that can be alleged in support of the views expressed therein. I set out with saying, that, "when I charge those who differ "from me with exaggeration and mis-statement, I do not "wish to accuse them of dishonesty"—it was not my intention to go beyond the limits of fair discussion and searching criticism; and I do not think I am chargeable with

having done so. I do not however intend to occupy your time with observations of this purely personal character; if my conduct is amenable to the censure Dr. Hume has expressed and implied, observations of mine cannot procure exemption from your disapproval.

We meet to-night to ascertain the real state of the question under discussion; not to determine whether the opinions Dr. Hume and I hold of each other's method of conducting controversy be well or ill-founded.

Reference has been made to three papers contributed by me to the British Association for the advancement of Science in 1854, 1855 and 1856; and it is asserted that two papers, virtually the same, have been laid before the Association four times, at three of its successive annual meetings. This statement is erroneous; and though it is unsupported by any evidence, I may be permitted to say that those who feel interested may see a notice of the first paper in the *Liverpool Mercury* of September, 1854; it consisted entirely of diagrams, which have never been used again at any meeting of the Association; the substance of the second is given in the *Civil Engineer and Architect's Journal* for 1855; the third is published, at length, in the volume for 1856 of the Proceedings of the Association, and it has been recently reprinted, almost in full, in the *Artizan*.*

The second paper was prepared on the suggestion of my colleagues on the special committee; it excited some interest, and was read in a second section at the request of influential members of the Association, by whom the requisite permission was obtained. I understood that a summary appeared in one of the London daily papers, but I did not see it. It may be of interest, now that their report is again under consideration, to mention that the special committee consisted of the Earl

* Vol. for 1865, p. 30.

of Harrowby, Sir Philip Egerton, Bart., Sir R. I. Murchison, Admiral Beechey, Mr. George Rennie, C.E., Mr. Joseph Brooks Yates, Mr. Andrew Henderson, and myself: all these gentlemen, with the exception of Mr. Yates, were very regular in their attendance at meetings of the Committee. Various members of the Committee specially assisted in the investigations; and, through the influence of the Earl of Harrowby, and of Admiral Beechey, I had access to various documents of importance in the offices of the Board of Trade, the Hydrographer to the Admiralty, the Duchy of Lancaster, and elsewhere. *

Dr. Hume's communication of July last contains a great deal of interesting and instructive information, which, however, appears to me irrelevant to the points on which we differ. It seems intended to correct assumptions in which I never indulged. I do not question the discovery of coins, fibulæ and brooches at Hoylake; nor the existence of what, in ordinary parlance, are called submarine and subterranean forests; nor the great encroachments, especially on the Lancashire coast, of blowing sands; in 1856 I prepared for this Society a paper in which I invited attention to the latter, and especially to the destruction of the village or hamlet of Altmouth. This was published in the *Liverpool Courier*, and a reprint is in the Society's library.† The points really at issue between us appear to me to be but two; which are (1) whether the several remains of forests are *in situ*, where they grew, or are they depositary: and (2) whether during the last two thousand years the main features in the history of the coast indicate accretion or diminution.

* Whilst correcting the press, I have seen a proof of part of the paper which Dr. Hume has prepared for publication in this volume in lieu of the two which he read at the meetings, and I find that the portion to which the foregoing paragraphs refer has been omitted; as, however, they are in type, it seems better that the record should stand.

† D. 7.

All the other questions as to the graveyard, the lighthouse, &c., are subsidiary to these main questions; but as the existence of these remains is relied upon as part of the evidence, it seems desirable to review the allegations in that behalf.

I think it must be admitted that, with respect to the graveyard, the only testimony, which can be regarded as in any way authenticated by personal responsibility, is to be found in the articles in the *Liverpool Courier*. These Dr. Hume says were written by Mr. Kaye, a fact of which I was previously ignorant. It is clear that neither Telford, Stevenson nor Nimmo has left the slightest record of the discovery of either the graveyard or the ploughed fields. As considerable stress is laid upon the opportuneness of selecting this period, after a lapse of nearly forty years, to question the authenticity of the alleged discovery, I quote a remark of the late Mr. Egerton Smith, after republishing the *Courier's* article:—

"We presume Mr. Nimmo must have published all the par-
"ticulars of his singular discovery, but we have never had
"the good fortune to meet with any such document."

This "sceptical" remark was published in September, 1837, or nine years and a half after the date of the alleged discovery. In my former paper I have mentioned that when in 1828 the *Mercury* reprinted part of the *Courier's* article on sea encroachments, in which the discovery of the graveyard was recorded, the passage relating to that discovery was omitted, as if the editor of the *Mercury* distrusted its authenticity. Evidence is given in the report of the committee of the British Association inimical to this supposition. Of that committee Mr. Yates, who is cited in support of the alleged discovery, was a member; but it does not appear that he ever uttered the slightest comment; and, in 1856, appeared the paper, before referred to, on the alleged old lighthouse at Wallasey Leasowe, and the ancient village of Altmouth.

Great value is attached to the fact that the eight gentlemen, named by the *Courier*, had visited the Leasowe shore on the day, or shortly after, it is supposed the alleged discovery was made. We are told they were "publicly appealed to within "forty-eight hours, in an article which recites their names; "and that, if the statement had been untrue, or if the evi- "dence had not satisfied them, there would have been a "contradiction of it—whereas there is a corroboration in the "very next number of the paper." This corroboration is quoted subsequently, but, such as it is, does not come from these gentlemen; it sets forth that the writer thinks he shall be able to shew that the ravages of the sea had involved the destruction, not only of the lighthouse, to which he had before alluded, as well as of the graveyard, but also of a church; whether this church was in any way connected with the cemetery he had not yet had the means of investigating.

Now, as to the testimony of the eight gentlemen. Their visit we are told was made "at the time of high water," and therefore, since the graveyard was "150 or 200 yards below "the flow of the tide," it would be impossible for them to see it; and their evidence, if they had given it, could have been hearsay evidence only, and could not be accepted if it were tendered. But I have yet to learn that the eight gentlemen by their silence in any way sanctioned the report. To have denied it would have been equivalent to telling their informant he was disbelieved, so they discreetly kept a silence which has never been broken, even by Mr. Hartley, one of their number. No doubt the eight gentlemen were "greatly "interested" in the alleged discovery, when it was reported to them; but it does not appear that any of them ever saw the graveyard.

Considerable stress is laid upon a note from Mr. Hartley in 1846.* He says, "all I know of any antiquities in the

* Pro. Lit. and Phil. Soc., No. 2, p. 69.

"neighbourhood of Hoylake, is that of *having heard* that a "graveyard was found. * * * * The discovery was, "I *understand*, made by a brother of the late Mr. Alexander "Nimmo."

In other words he says,

> I know not if the tale be true,—
> As told to me, so I tell you.

Not a word of his believing the statement; he was too guarded to commit himself by saying "I believe the discovery "was made;" he merely says he understands and has heard. It is to be regretted that Mr. Hartley's cautiousness has not been more generally adopted.

With respect to the unfortunate church, I cannot learn that any further relics were discovered; I presume the writer never "had the means of investigating," or, if he had, that the result overthrew the church, if not the churchyard. It seems very strange that the "series" of articles on this and kindred subjects should come to a conclusion, and leave a question so interesting undecided.

It is to be observed that the whole of the evidence in favour of the graveyard and church is of a hearsay character; not one of the persons cited, *by name*, gives his personal testimony; not one says "I saw it." Even Mr. Kaye does not commit himself to personal testimony, but apparently recites information from a source which, no doubt, he considered respectable, but which we, in the absence of corroboration, may reasonably distrust; especially when we know how much editors are tempted by sensation writing.

Let me add, that having incidentally recorded the fact that the eight gentlemen had been "greatly interested," I did not think it desirable to lengthen a paper, almost too long, with further quotations, which did not yield any evidence of any kind to the purpose. Those who wished to investigate the subject could use the reference I gave, just as Dr. Hume has

done. On the whole I think this evidence, when carefully examined, is rather prejudicial to the graveyard theory.

Is it not strange that the alleged discovery should be accepted on such slight and inconclusive testimony? That the site assigned to it has never been examined since? That it should be visible only once, to the eyes of a favoured few, and then disappear?

> Just like a snowflake on the river,
> A moment there, then gone for ever!

Dr. Hume informed me it was in contemplation to hold an inquest at low water on 7th ultimo; the appointment was very inconvenient to me, as I had arranged to leave home for a few days, on the morning of that date; but, though I altered my arrangements in order to be present, the meeting was postponed on other considerations. If, however, it is thought desirable to investigate the subject on the spot, I shall be happy to arrange to do so, at the spring equinox, when the tides will be most favourable, and to have proper tools at hand. Meanwhile I would remind you that less than thirty-eight years have elapsed since the date assigned to the alleged discovery; a period far too brief to have exhausted all contemporaneous testimony.

I need not recapitulate the evidence fatal to any old light-house on the Leasowe shore prior to 1761; the Act of Parliament on the subject has conclusively settled that question, and shows that none such existed.

With respect to the renewed reference to Drayton, Stukeley and other authorities subsequent to Leland and Camden, it is to be observed, that reference merely shows the received opinion at the several periods at which they wrote. I believe I was the first publicly to draw attention to the testimony of Leland and Camden, which has been accepted by Baines. If any evidence can be adduced to shew that the submarine

remains of forests occupied their present position, prior to the date assigned to the irruption of Chat Moss, let it be brought forward; but if such evidence does not exist, let not the authority of Leland and Camden be lightly set aside; and let some more feasible explanation be given of the probable destination of the twenty or twenty-four square miles of moss set adrift in the Mersey.* The upper reaches of the river are abundantly wide to admit even now of the transit of large masses of peat; and before the artificial navigations were constructed the space was wider. It does not appear that this irruption arose from "a flood in a little brook;" nor did I assign that cause, nor is it suggested by either Leland or Camden; it was a fleeting, similar to, but more extensive than that of Solway moss in 1771, Pilling moss in 1744-5, and others which have been recorded in Ireland and elsewhere. Probably it arose from a long continued wet season, through which the bog became surcharged with moisture and so broke bounds.†

It is possible this was not the first in that locality, for Leland says "in the very toppe of Chatley more, where the "mosse was highest and brake, is now a fair plain valley, *as* "*was in times past,* and a rill runneth in hit, and peaces of "small trees be found in the bottom." Baines, referring to this statement, which is confirmed by Camden, says, "no man "living (1835) has any recollection of such an appearance, "and the centre of the moss, when the cultivation was under-

* From the paragraph appended to this paper it will be seen that I do not attach any importance to the accuracy of this area, the extent of which, of course, depends upon whether Leland dealt in extreme, or average, dimensions; it is manifest from his account that a large extent of moss was carried into the Mersey, some of which reached the sea.

† By the irruption of Pilling Moss nearly 100 acres of improved land were nigh filled up with moss and water, in some places it was thought to be five yards deep. The part of the moss which was sunk, like the bed of a river, runs north and south, is above a mile in length and near half a mile in breadth; so that it seems there is a continual current to the south.—*Baines's Lancashire*, vol. iv, p. 469.

" taken by Mr. Roscoe, upwards of thirty years ago, under " the authority of a grant from Humphrey Trafford, Esq., the " lord of the soil, sanctioned by an Act of Parliament, had " risen to its original elevation." He adds, " the drainage " for the purpose of cultivation, and for the passage of the " Liverpool and Manchester Railway, has for ever done away " with the danger of a second bursting of the bog."*

Of course Baines's statement, that the centre of the moss had risen to its original elevation, was only an inference; and it is very likely Leland records a similar inference when he speaks of the new state being as in times past.

It seems, however, by no means improbable, that there have been two mosses. The origin of the Lancashire mosses is ascribed by Baines to the Romans; and, in the interval between their departure and the beginning of the 16th century, there was abundant time for the recurrence of similar irruptions. Baines gives the area of Chat Moss as 6000 acres, which is equal to nearly ten miles; the mass swept away, as recorded by Leland, was therefore much greater; very likely Holcroft Moss, which is divided by Glazebrook from Chat Moss, shared the movement, as Holcroft Hall† was in jeopardy. I do not know the area of Holcroft Moss, but I do not think it would make up the extent mentioned by Leland, and so it may be the mosses never regained their former area. Such an irruption was well worthy of record by the learned topographer; others of less magnitude may not have left any trace, other than their remains on the shores of the Mersey and Bay.

In describing Chat Moss, Baines says, " Trees are continu- " ally found imbedded in the peat soil, principally *birch*, *oak*

* *Baines's Lancashire*, vol. 3, p. 133.

† Dr. Hume states, I know not on what authority, that Hurst Hall was the residence of Sir John Holcroft which was endangered. Gough in his notes to Camden intimates it was Holcroft Hall.

"*and fir*, as black as jet and as hard as ebony; most of the "trees are charred on the exterior, indicating that they have "fallen under the operation of fire rather than by the strokes "of the husbandman; they generally lie in the direction from "W. to E." After alluding to various theories of the origin of bogs, he says, "the mosses of Lancashire may be probably "ranked amongst the other vestiges of Roman antiquity. "According to Cæsar, the ancient Britons on the invasion of "the Romans took shelter in the swamps of the forest; and "it is recorded that Agricola, in order to free himself from "the hostile incursions of the native Brigantes, ordered their "woods to be burnt down, or felled by the Roman soldiers."

Again, in his description of Warrington,* he says, "the "eastern portion of the parish of Warrington consists princi- "pally of tracts of peat earth, and Glazebrook Moss, Rixton "Moss, Risley Moss, and Martinscroft Moss form part of the "flat and swampy plain, of which Chat Moss is the parent "stock. Beneath the surface of Martinscroft Moss are found "masses of solid peat earth. Rixton and Glazebrook Mosses "are divided from each other by a narrow slip of land, high "and steep, about 120 yards in width, consisting of solid clay, "as if designed as a marly covering for the light soil. *Oak*, "*fir and birch trees* are found buried in these morasses, some "of them charred by fire; others torn up by the roots, as if "by storms, and many bearing the marks of the axe; while "the trees imbedded in Martinscroft Moss appear as if they "had been washed down by floods."

And again, in his description of Winwick,†—"There are "several peaty tracts in this parish, the principal of which is "Holcroft Moss, which is separated from Chat Moss by the "Glazebrook, intersecting the morass in its course from north "to south. The other tracts of this description of soil are

* Vol. 3, p. 649. † *Ib.*, p. 686.

"of small dimensions, and consist of Risley Moss, Bryn "Moss, and Lowton Moss, all partially improved, and Gol- "borne Moss which is entirely reclaimed. *Oak and birch* "*trees* are dug up in these beds of vegetable accumulation "from age to age, some of them exhibiting the appearance of "having been thrown down by a hurricane, and others, par- "ticularly those found in Bryn Moss, split from top to bottom, "of having fallen under the war of elements."

Mr. Baines was practically engaged in the reclamation of Chat Moss, and therefore, as Brindley considered rivers were intended to feed canals, he supposed the clay ridge between Rixton and Glazebrook Mosses was designed as a marly covering for the light soil. Being thus enthusiastically interested in, as well as practically conversant with the subject, he may be accepted as a reliable authority. Most of the mosses to which he refers are in immediate proximity to the Mersey and its feeders.*

I will now quote Mr. J. P. G. Smith's description, which accompanied his section of Bidston Marsh, addressed to the Literary and Philosophical Society, 26th May, 1849.†

Above the common red clay or brick earth, he says, "is a "stratum of white sand. It forms a tolerably equal layer, "about three feet thick, and, when carefully examined, is "found to contain the remains of sea shells (which Mr. "Higgins states to be a species of tellina); but they imme- "diately crumble to pieces on exposure to the air. I have "not examined the sand chemically; but, it appears to me, "there are traces of carbonate of lime mixed with it. I think "there can be no doubt that this stratum of sand is a sea "deposit, both from the presence of shells and of numerous "rounded pebbles of limestone and other rocks, apparently

* The italics in these and the following extracts are mine; their purpose will appear hereafter.

† Pro. No. 5, p. 170.

"similar to those we find in the neighbouring coast. Upon "the surface of this layer or stratum of sand, which has "probably remained long undisturbed after its deposit by "salt water, an accumulation of soil has taken place sufficient "to afford nourishment for the growth of vegetation; for "there are the remains of an extensive and dense forest, con- "sisting of *oaks principally*, and probably of *elms, alders,* "*nuts* and other trees. When first disclosed the wood of all "these trees, with the exception of the oaks, was soft and "spongy, but they became hard and brittle by exposure to "the air; generally speaking, they are of a dull red colour, "though the oaks are nearly all black—the latter are in some "cases totally sound. On close observation, all the boles of "the oaks and other trees that remain in situ are found to be "growing immediately above the sand, and pushing their "roots into the clay below. Some of them have attained "considerable size, and one in particular, which has been less "exposed by the workpeople, is nearly three feet in diameter "above the spread of the roots. From the regular form in "which the roots of these oaks present themselves, I cannot "help thinking that the trees were felled with the axe; for, "if they had been levelled by a storm of wind, they would "have been torn up by the roots, not snapped off *close to the* "*ground, and at their strongest part;* so, likewise, if they "had been thrown down by an irruption of the sea, the force "of water sufficient to snap an oak tree of the size of those "in Bidston Marsh, would have carried away, not only the "stems, but the loose sand in which they were growing.

"Above this sand, and enveloping the roots and stems of "the trees, is an irregular accumulation of peat, varying in "thickness from two to three feet, at the south-east end of the "cutting, to twelve or fifteen feet, a hundred yards from the "road; it then dips towards the north for a short space, and "again rises to the surface of the marsh, and continues

" within a few inches to three feet of it, as far as the cutting " extends.* * * *

" Such an accumulation of peat would be the natural result " of the prostration of a dense forest upon a damp soil, and " there is more than one instance upon record, of the accumu- " lation and formation of a moss in consequence of the over- " throwing of a forest. * * * *

" Above this peat is a deposit of alluvial soil varying from " a few inches to six or seven feet in depth, and forming the " soil of Bidston Marsh. * * * * * There are no " traces whatever of pebbles or coarse sand in this super- " structure, and as it closely resembles the deposit now daily " accumulating in Wallasey Pool, it is highly probable, " indeed almost certain, that the whole of this alluvial soil " has been deposited in the same way, and that, in point of " fact, the whole marsh constituted a part of the pool, the " level of Bidston Marsh being scarcely above that of the " pool at spring tides."

In the course of the conversation which ensued when this letter was read, it was stated that a gentlemen thought he recognised the wood of the walnut and the yew as well as of the oak, the alder and the birch; and Dr. Inman objected to the idea that the trees had been felled by the axe; he considered their fall was due to the trunks having become dead, saturated and softened by the moist vegetable debris accumulating round their roots: they would then be readily snapped by storms, which would not affect the parts below the level of the moss.

Now a comparison of these descriptions with those of Baines will shew a resemblance so close as to manifest they

* It is asserted (*ante* p. 26) that I stated no greater thickness is assigned to any of the peat beds than three feet: the remark was restricted to the section of the strata at Dove Point, published in *Ancient Meols*. We are yet without any explanation of the method by which " gigantic trees" were grown in a stratum of peat three feet in thickness!

refer to similar phenomena ; and so with all the descriptions of the forest remains on this coast. The effects of fire do not seem to have been observed, at any rate in Cheshire : but in other respects the resemblance is very close. It will be observed that the birch appears to be found both in Bidston Marsh and in the neighbourhood of Warrington. Of the several trees enumerated I find* that the oak, *Quercus robur* and *Q. sessiliflora*, prefers strong or even clayey loam ; any soil not wet or chalky ;—the ash, *Fraxinus excelsior*, affects a dry subsoil ; dislikes a stiff clay ;—the walnut, *Juglans regia*, deep loam with a pervious subsoil ; dislikes strong clays ;—the birch, *Betula alba*, forms best timber on a dry, sandy or gravelly soil ;—the elm, *Ulmus campestris*, *U. glabra* and *U. montana*, attains, near the banks of rivers, a large size ; thrives in moist soils ;—the spruce, *Abies excelsa*, *A. alba*, *A. rubra* and *A. nigra*, deep, moist soil, in low situations ; dislikes thin sandy soil and exposure ;—the larch, *Abies larix*, adapted for thin mountain land, or any soil of which the subsoil is not retentive ;—the yew is not mentioned in this article, but I think it requires a pervious subsoil ;—and the alder, *Alnus glutinosa*, moist or even swampy soil. Of these, then, the only tree likely to thrive in a morass is the alder ; the elm thrives in moist soils, but prefers the neighbourhood of running streams ; the spruce fir a deep moist soil in a low situation ; the habits of the other trees do not accord with the soil in which they are alleged to grow, three feet of sand on a bed of strong clay ; and as we have been told that the growth of peat is inimical to certain trees, birch for example, we may assume that when the peat began to flourish the birch died ; consequently the trees had nothing to grow in but the three feet of sand and the clay subsoil, which we learn some of them dislike. At the rate of two inches per annum, a bed of

* *Penny Cyclopedia*, Art. Planting.

peat twelve or fifteen feet in thickness, say 13½ feet, would take eighty years for its growth: oak trees, three feet in diameter, would require say 100 years, so that 180 years had elapsed between the deposit of the white sand and of the alluvial soil, both of which Mr. Smith says are identical with the corresponding deposits on the adjacent shores. The question naturally arises, in what way was the tidal water excluded while the trees and the peat were growing? I must leave the explanation with those who think the growth took place here; if I were to attempt a solution I should occupy the position of the Royal Society when they attempted to answer the Merry Monarch's jest, why a bowl of water after a fish is put into it does not weigh more than it did without the fish. But I should like to know what was the history of the littoral deposits during the long interval occupied by the growth of trees and peat? Were all deposits held in suspense? for except the interposition of the peat there does not seem to be any difference between the deposit in the marsh and those in the pool.

As Mr. Smith is under the impression that the roots of the trees penetrated the clay below, I beg to remind you that Mr. Stevenson, the engineer, merely says, not that the roots *sought* the subsoil below, but that they were "dipping "*towards* the clay subsoil," which clearly implies that they not only did not penetrate the subsoil but did not even touch it. On the supposition that the peat and trees form, not a growth *in situ*, but merely a deposit, it is quite possible to reconcile both observations. When the mass was lifted by the rising of the water in the moss, the roots of some of the trees might be torn out of the ground in which they had grown; in the course of transport the earth which adhered would be in some cases washed away; when of an adhesive nature it would not be removed to the same extent. These roots, of course, would protrude below the bottom of the peat

bed, as they must have been below that bottom when they were in their native soil; and so when they came to be deposited on any soft bed of sand or mud, the weight of the mass would force these roots downwards, the extent of depression depending on the amount of resistance. The extent of the protrusion would depend upon the place where the roots were least able, from decay or otherwise, to resist the buoyant influence of the water. In some cases, perhaps the majority, the line of severance might be on the original surface of the ground; in others at various depths below; and thus the inconsistent testimony as to the extent to which the roots penetrate in these remains may be reconciled.*

I beg to remind you that Mr. Smith, in his description, speaks of an accumulation of soil having taken place on the stratum of sand, which was sufficient to afford nourishment for the growth of vegetation, for there are the remains of an extensive and dense forest. He does not, however, offer any suggestion of how this accumulation of soil took place. If it was the produce of weeds and grass growing on the sand, we must suppose the water was excluded wholly or in part; if the latter the surface of the sand would become a marsh. The formation of vegetable mould in this manner is tedious, and therefore the requisite time for the formation of a matrix for the seedlings of trees should be added to the former calculation. At any rate I suppose we may assume the tide was excluded during the growth of the trees and the peat; and how? is naturally the next question.

If trees will flourish in bogs and have done so, is it not strange that throughout their vast extent in this neighbour-

* In isolated cases, trees drifted with the tide may have stranded during the formation of a deposit of clay, or other alluvia; as the subsequent deposit would be around and above such roots as the stump retained, a careless observer might suppose the trees to be *in situ;* but I think it will be found that the roots are all broken off short, and that the rootlets have disappeared. An example of this was observed when the Geological Society visited the forest remains at Meols on 26th July last.

hood there is not a single example of timber growth in unreclaimed bog? Is there any example in all Ireland, or anywhere else?*

The Roman and other ancient remains which have been found at Hoylake, form another element ef perplexity, on the supposition that all these remains of forests are *in situ;* for there is not any other positive evidence which can be adduced to support the idea that the Romans ever visited this locality, much less resided here. We know that they have left their mark in Flintshire; and when they deserted their galleys and approached Chester by either bank of the Dee, we may assume that they preferred the Welsh bank, where they had a road and outposts, rather than the Cheshire side, in which it does not appear they had any road or outpost whatever.

Those who suppose that the Cheshire shore was preferred are bound to shew some reasonable cause. As yet there does not seem to be any further trace than coins and articles of personal adornment, such as are constantly given as presents by a civilized to an uncivilized people. Now we know that Roman remains are very abundant at Wilderspool and Warrington; we know that that neighbourhood, on each side of the Mersey, abounds in mosses, and from the number of trees found therein, it seems probable that these mosses are the sites of ancient forests, which, it is also probable, were wholly or partially destroyed by the Romans. These forests would

* It has been asserted (*ante* p. 18) that in Leigh's *Nat. Hist. Lanc.* it is stated that in Martin Mere the fir, birch, ash and oak are all in separate positions, as if forming distinct and classified forests; but on referring to p. 61, Ed. 1700, it will be seen that Leigh says,—"It is observ'd by some the *Pines* by themselves "are found in numbers, and likewise other trees ranged in order are discovered "together, as *Birch*, *Ashe* and *Oak*, distinguish'd in several lines, whence they "probably infer that woods of those distinct trees once grew there. To this I "answer, that tho' they may be observ'd so in Martin-Meer, yet the assertion is "not generally true, for I have observed them in other places to lie promis-"cuously, here a *Firre-stock*, next to it a *Birche*, an *Oak*, or an *Ashe*, not keeping "any order at all; so that what one particular place may do, no wise illustrates "a general history of those fossile trees, since generally speaking the quite con-"trary is observ'd;" and he concludes that these deposits are water-borne, but assigns the Deluge as the vehicle. He does not deny the statement as respects Martin Mere, probably because he had not examined it himself.

furnish covert and hiding places for the natives, who, as has been the custom in all ages, would hang round the settlements of their more civilized invaders, to beg or steal, being too uncultivated to understand appropriation by borrowing; and when they retreated from pursuit they would carry with them the gifts they had received, or the plunder they had taken; and, unprovided, as they would be, with trunks and packing cases, a good many of the articles they carried would be dropped in the jungle, or the swamp, where they would lie until converted, by the lapse of ages, from the waifs and strays of barbarous life into treasure for the antiquary, and subjects of interesting inquiry by a society like this. It is also to be remembered that Chat Moss is supposed to have been traversed by two Roman roads, one between Manchester and Wigan, the other between Warrington and Manchester.

Peat being to some extent buoyant, when the flood came and swept it into the river, it would follow the course of the stream or the tide; it would be wafted hither and thither, perhaps for many days, until, at last, it would either be deposited at the top of the tide, or, becoming sodden and waterlogged, would sink into deeper water, as in parts of Bidston Marsh, or at the mouth of Rimrose Brook, where it has been dug up lately, when the foundations of the railway viaduct were put in.

I was told last June by the men working at Rimrose, that the thickness of the bed of peat was about eight feet; and I saw that the surface was far below the level of spring tides. At a short distance northwards, on the shore near Mr. Muspratt's house, was a deposit of peat about eight or ten inches in thickness, and at that time about 400 or 500 yards in area, which had been uncovered through a recent alteration in the tidal current; therewere a few small trees, about ten or twelve inches in diameter.

The remarkable variations in the levels at which these beds

of peat are found, and in the thickness of those beds; the manner in which, as at Leasowe, some overlie others, and in all cases follow the inclination of the surface beneath confirm the supposition that they have been deposited in water.

The upper surface of a growing moss, or one which is *in situ*, though it may be under cultivation, I believe always presents a surface of great uniformity; level, with a slight real or apparent convexity. In the way of my profession and otherwise I have been on several mosses in Lancashire and Cheshire, and I do not remember any such striking variations in the contour of the upper surface as are shewn on Mr. Smith's sections of Bidston Marsh; variations which are the more remarkable from the contrast they present to the surface of the sand below, or to that of the alluvium above.

I do not suppose that all the deposits of peat on the shores of Lancashire and Cheshire are derived from Chat Moss alone, though there may have been more than one irruption. As Chat Moss is stated to have been from ten to thirty feet in depth,* there was plenty of material for a large extent of deposit of a reduced thickness; half the average depth, if solid, would give a deposit equal to double the area of the original moss; and if much of it was reduced to a thickness of one or three feet, the area would be greatly extended.

I have suggested that "if the immense extent of moss "bordering the upper part of the Mersey and the sea-coast "between the Mersey and the Ribble be considered, there "cannot be any difficulty in ascribing to a similar origin all "the various deposits of peat which have been found on both "sides of the Mersey;"—and further, that the position of all the deposits within the recorded or probable tidal range is presumptive evidence of their derivative and water-borne character.

* *Penny Cyclopedia*, Art. Bog.

Since writing the above extract, I have found in Baines* an account of another irruption on a small scale which may have furnished a contribution. He says, "one of those "eruptions, *formerly not unusual in the county of Lancaster,* "which is distinguished for its mosses, spread consternation "and alarm in Manchester, at the opening of the year 1633. "In the morning of New Year's-day, Hough Moss, adjoin- "ing to Chorlton Row, was seen to rise from its bed, and to "float to the neighbouring brooks and rivers, where it de- "stroyed the fish, blackened the water, and left behind it, on "the land over which it passed, a wreck so deep and per- "nicious as to reduce fertile soils to a state of sterility. "Happily only one house then stood in its course to the "waters. Such an eruption in the present day in the same "situation would make dreadful havoc." The brooks and rivers of Manchester are all tributaries of the Mersey.

Before quitting this part of my subject, let me observe I do not see the analogy between the estimate of the area of a coal bed with one of the number of bodies deposited in an area of undefined extent and thickness. Nor, though I am aware that peat and trees are very buoyant, do I consider that rafts of such formations would be equal to the transport of tombstones; but before I admit the existence of the gravestones let me be informed upon what authority their existence is based? They are not mentioned by either Kaye or Traill or Yates; and if they were removed to Wallasey churchyard was there not a record kept? As yet we have not been favoured with copies of any inscription from the alleged gravestones of the alleged churchyard; but I do not doubt there is sufficient mischievous humour in Liverpool for their preparation.

Having now reviewed the evidence which is furnished from

* Vol. ii., p. 268.

the landward of this subject, I request your attention to that which is derived from the seaward ; let us consider what are the wild waves saying, the message from the sea they bring.

When, a dozen years since, I commenced the investigation of the changes in the Mersey and Bay, my object was to learn, if possible, the causes of those frequent fluctuations in the channels of the port, which had awakened my interest. For this purpose, it seemed desirable to compare all the charts which had been published, and thus to obtain the basis for a correct theory.

I abstained from any examination of any existing theory or suppositions, determining, in the first instance, to collect and compare facts ; I even abstained, almost entirely, from drawing any deductions ; and those who will take the trouble to read my report to the British Association will be able to decide how far I have adhered to the ideal I had formed of the manner in which the work before me should be performed.

In the course of my investigations it appeared that the coast, instead of having sustained important abrasion, had received additions, which, on the average of a series of years, were constant. I felt, consequently, considerable doubt as to the correctness of opinions and conjectures then generally received ; and not only spoke in my report of the so-called submarine forests, but expressed the opinion that, having due regard to recorded facts, the whole waste on the Leasowe shore cannot be estimated at more than 400 yards in breadth, which has taken place certainly within the last 200 years, and probably within the last 150 years ; and that it had been confined to a very small lineal extent of coast, not exceeding two miles.

I have reason to believe that my calculations have been submitted to a not very friendly scrutiny, and that they have passed the ordeal unimpugned. I went into the investigation as an engineer and for engineering purposes.

An attempt has been made to show that the evidence of the old man Barclay, quoted by Mr. Stevenson, is very much at variance with the results of my investigations into the waste of the shore. The substance of his evidence is given in my former paper. As respects the extent of waste, he said that he knew that in thirty years the shore of Leasowe lost, *by measurement*, eleven Cheshire roods, or eighty-eight yards; and verily believed, that since he knew the shore, it had lost upwards of half a mile of firm ground. It must be conceded that I do not admit any waste equal to half a mile, for the records which exist overlie the period of Barclay's whole life, and I prefer the record of authorized Marine Surveyors to the precarious recollection of upwards of ninety years. But I do not see any discrepancy in the waste of eighty-eight yards in thirty years, any more than I distrust Mr. Rollett's estimate of the loss of 180 yards in thirty years. Certainly it is rushing very wildly to a deduction to infer, that if I admit a waste of six yards per annum for thirty years I must admit the same rate of waste for 150 or 200 years! The fact is, the rate of waste varies almost from year to year; I have abundantly shewn the capriciousness of changes caused by wind and water in my report to the British Association. For months or even years the changes may be trivial, almost unnoticeable, and in a week, nay, in a single tide, an alteration of great magnitude may be produced.

Barclay's evidence was given in 1828, when he was 93 years of age, therefore he was born in 1735. The result of my comparison of the charts shews that this part of the coast actually grew seawardly between 1689 and 1755; and that there was a waste between 1755 and 1813. In 1755 Barclay would be twenty years old, therefore, if the waste commenced a little before or a little after that date, and continued until 1828, of course, speaking from his own observation only, *he*

might be excused if he had supposed that the waste had continued always; but we, who possess superior sources of information, and can compare various records, are bound, as far as possible, to reconcile the testimony when apparently conflicting, and to accept the general conclusion from that testimony. Unless the surveys were coincident with the alternations of greatest growth and greatest waste, it is very possible for the growth seaward to have been greater than is recorded, and the waste consequently more. The testimony of charts is only an approximation to the truth, they are plotted to small scales; and we cannot be sure the earlier surveys are so exact as the recent. The testimony of Mr. Coode, the Engineer of the Portland Harbour and Breakwater, which was given before the Committee (H. of C.) on the Leasowe embankment, April, 1864, is corroborative of my statement. He says the breadth of foreshore washed away in twenty-one years, between 1771 and 1792, was 93 yards, or $4\frac{1}{2}$ yards per annum; in another period of twenty-one years, from 1792 to 1813, 99 yards, or $4\frac{3}{4}$ yards per annum; in fifteen years, between 1813 and 1828, the rate was $1\frac{3}{4}$ yards per annum; or between 1772 and 1828, 218 yards in fifty-six years. It will be observed that the period of Mr. Coode's calculation coincides with the principal part of Barclay's period of observation. If to Mr. Coode's estimate of 218 yards, down to 1828, we add Mr. Rollett's observation of six yards per annum for thirty years, we get 180 yards in addition, or a total of 398 yards between 1772 and 1858, that is in eighty-six years. Now I estimated the waste from 1755 to 1855 at about 400 yards, which is singularly close to the result of adding the estimates of Mr. Coode and Mr. Rollett. It would appear, then, that the waste of 400 yards has taken place since 1772, or in between eighty and ninety years; my cautious statement in 1856, that it had been confined certainly

to the last 200 years, and probably to the last 150 years, is amply confirmed.*

These observations, of course, refer to the Leasowe shore, where the waste was greatest. There has been a good deal of waste beyond the limit of "two miles;" but they are of much less importance, and may be omitted from this part of the argument.†

The chart before you is from Lieut. Parkes's most recent survey of this part of the coast, 1862, and on it is shewn the state of the bay as recorded on Collins's survey, 1689. It exhibits the changes which have taken place horizontally, above low water level. But it represents only a part of the enormous alluvial deposit which has taken place within the last 180 years. I have estimated‡ that in seventeen years, from 1837 to 1854, the increase, above low water of spring tides, in all the banks between the Dee and Formby point, including East Hoyle, was 22½ millions of cubic yards, or about 14½ per cent. for the whole period. But there are continual fluctuations in the growth of these banks, and between 1837 and 1840, that is in three years, there was actually a diminution of more than 8½ millions of yards, which shews

* Dr. Hume refers to Mr. Coode's evidence, (*ante* p. 57) and yet assumes that the rate of waste is uniform.

† It is stated that "a church was in ruins and disappeared, with its churchyard, at the close of the seventeenth century; and traditions of it survived and "of its locality, so late as 1828." Yet when Mr. Stevenson was examining Peter Barclay and the other two old men for evidence of sea encroachment, it does not appear that the old church and churchyard were even mentioned or alluded to. Barclay was born within fifty years of the date assigned to their destruction; he was giving evidence, on the encroachment of the sea, in 1828, the date to which we are told the tradition descended, and yet he omits all reference to this the most striking evidence of the facts he intended to establish! This is scarcely credible; and the total silence maintained by Barclay and the other two witnesses is, under the circumstances, strong negative evidence on the existence of the church and churchyard: or else we must suppose their testimony on this point was suppressed by Mr. Stevenson as something too monstrous for belief. Believing as I do that Mr. Stevenson has recorded most conscientiously all that he observed and heard on the subject of the encroachment, I am constrained to believe that the church and churchyard are entirely mythical.

‡ Report to British Association, *ut supra.*

the importance of extending the comparison over as long an interval as possible, in order that irregularities may be eliminated.

The amount named above by no means represents the whole of the accumulation, as it does not include the extensive deposits below low water level; nor does it include the large amount of drift to the sandhills on the shore. There is doubtless considerable drift from the Welsh coast, which is brought by the prevalent westerly winds, and so it may be that the gain in this direction nearly compensates for the loss through the drift on shore, caused by the same winds. If this be assumed, the accumulation unaccounted for and indeterminable is that in the shallows, shoals and shelves.

Comparing a tracing of Collins with the chart published by the Admiralty 1864, it will be seen that off Chester Bar the ten fathoms of Collins has diminished to six fathoms; and off Hoyle Sand other soundings of seven, five and three fathoms have diminished to five, one fathom and dry respectively.

If we may assume that the annual deposit on the *banks*, since Collins's survey, has been the same as the average between 1837 and 1854, the total accumulation is nearly 237 million yards, exclusive of the indeterminable quantity in shallows &c. According to Denham,* the quantity of silt brought down by the Mersey in each year is equal to upwards of 35 million yards, which, if equally distributed over the *first* ebb range, (164 square miles) he estimates would produce an annual layer of twenty-one inches thick; but as it is not so detained, but is disturbed by the succeeding ebb, the strength of which begins to-night where the evanescent stage of this morning's tide ceased, and extends over a secondary area of forty-one miles, in which region a proportion of matter

* Denham's Mersey and Dee, p. 135, and Pro. Brit. Ass., 1837.

is held, equal to one-third of that left in the primary region; this again is diminished in bulk one-half by consolidation, so that the actual annual quantum of measurable increase to the shallows of the bay and approaches to Liverpool is 11,695,817 yards, which, disseminated equally, would add a layer of seven inches in thickness. The cube quantity of deposit calculated by Denham being multiplied by 180 years, give a total deposit of 945 million yards over the whole estuary and its approaches.

It seems unmistakeably clear that the alluvial deposit in the bay is enormous, and is derived from the large amount of silt which is brought down by the Mersey, the Ribble and the Dee: it is derived by the Mersey from the constant wash of itself and its tributaries on their own bed, and on the lands by which they are bordered. These margins consist to a large extent of sandstone, sandy soil and clay; the attrition of the sandstone and the dissolving of the sandy soil of course produce sand, and the dissolving of the clay resolves it into its constituents—gravel, sand and fine argillaceous matter; the latter, I believe, sometimes forming those deposits of very fine clay which are found in Wallasey Pool and other places where the water was for the most part quiescent, and which in texture closely resembles potters' clay, being free from coarse ingredients. A good deal of this argillaceous matter, however, I think is dissipated in various ways, being sometimes deposited as mud in different parts of the Mersey and estuaries. Of every cubic yard washed from the clay lands, fully two-thirds in bulk are sand and gravel. This waste is taking place constantly, not only with every tide but with every rainfall; frost and storms lend their aid; and, in consequence, at various parts of the river, the water area has been largely increased.

The Dee and the Ribble are similarly affected, though not to the same extent; and, in consequence, we find the con-

fluence of these three rivers is distinguished by a very extensive alluvial deposit, which, in the present day, consists almost exclusively of sand.

If we examine a little further the formation of these several deltas, we find that the process must have extended over a very lengthened period; and, as respects that portion between the Mersey and the Dee, was probably accompanied by phenomena wholly incompatible with any large encroachment on the coast of Wirrall.

Referring to Collins, the waters of the Dee enter the sea by two channels; the western, called Chester water, the eastern, Hoyle lake; between these is a delta called Hoyle sand. If this be compared with the survey of 1862, we find the Dee has still two outlets, the western, almost identical with "Chester water;" but the eastern is altogether changed, Hoyle lake has been silted up, and a channel in substitution has been formed, right through Hoyle sand, called Hilbre swatchway. On charts intermediary with these the history of the change is recorded, and it is noted in detail in the report to the British Association. For the present purpose it suffices to observe that, owing to the increase of the deposits and the prevalence of westerly winds, Hoyle bank had a constant growth to the eastward; this growth turned the stream through the lake more and more in an eastwardly direction, and reduced its capacity by contracting its width. Contemporaneously Lime wharf, on the eastern bank of the Dee, grew out to Seldom Seen rocks; the impetus of the ebb stream was thus sent with increased power on the middle of Hoyle bank, and ultimately forced a passage. At first this passage was extremely shallow, but it was deepened as all the waters of the eastern branch were gradually excluded from Hoyle lake. When the tidal stream passed through Hoyle lake it could not occasion any waste on the Leasowe shore, because the flood, before entering the lake, divided in two streams,

one through the Horse channel the other through the lake, leaving slackwater between the bifurcation and the shore; and on the ebb, the converse operation ensued, the streams outwards uniting and rushing seaward. In Collins's time the indraft through Hoyle lake appears to have been much greater than that through the Horse channel; for in the Rock channel there was an accumulation of sand, seaward of the rocky ridge between the river and that channel, which, not unnaturally, has been compared to a ford. This sand is recorded by Collins to be all dry at low water, and formed the flats over which the big ships sailed when they had put out some of their lading in Hoyle lake. As Hoyle lake was contracted the proportions of the indraft would be reversed; and then the accumulation referred to would disappear. At the same time the flood stream impinged with increasing force on the Leasowe shore, and ultimately led to the formation of the embankment there, which was preceded by that survey of Mr. Nimmo, in which it is alleged the graveyard was discovered.*

The change of the position of Dove spit was due to the deflection of the stream through Hoylake, and consequently preceded the waste on the Leasowe shore.

During the latter portion of the period whilst Hoyle lake was verging to extinction, we may assume that the landward side of the lake would suffer; but the amount would be but trifling both as to extent and duration.

In a report of a survey taken by Mr. Edward Eyes in 1828, for the Duchy of Lancaster, revised in 1839 for the promoters of the Conservancy Bill, of which I possess a manuscript

* With every respect for Mr. Hartley I think the contemporary report in the *Courier* is in this instance to be accepted. The promoters of the ship canal wished to construct docks at Birkenhead, the trade to which should be exempt from Liverpool dock rates and town dues: for this purpose the entrance to the ship canal must be without the port of Liverpool, *i.e.*, west of the Red stones in Hoylake.

copy, it is stated in 1828, that "the coast here (Little Meols) "opens to that part of the estuary or bay of Liverpool, called "Hoylake, and from its situation it is subject to the usual "effects of storm and tide waters, to which such exposed "localities are liable. The Red Stones (rocks so called, "which extend to a considerable distance from high water,) "serve as natural barriers and defences against the incursions "of the sea, and greatly protect the shores in their vicinity, "otherwise the destruction of the land would be much more "than now appears, although it is perceptible that each year "large quantities are swept away, (this is most apparent about "the Royal Hotel,) and the devastation seems regularly "progressing." In 1839, "the line of high water is pro- "gressively encroaching upon the banks, particularly in front "of the Hoylake Hotel; the line of low water is about the "usual distance." In the Book of Reference which accompanied the report it is observed of the Royal Hotel in 1828, "Fences have been built at high water, and at different "periods renewed and set back, in consequence of the en- "croachments of the sea." In 1839, speaking of the same property, "Land much encroached upon by the tide, but not "for the last five years." The encroachment appears, then, to have ceased about 1833 or 1834; the rate is given very vaguely. Those who have witnessed the waste on the Speke Hall estate would probably say "that each year large quan- "tities are swept away;" the rate there I am informed has been about one yard per annum for some thirty years; and though this is a serious matter to the proprietor, and as an addition to the silt, it is a small encroachment of the sea, especially if restricted to a limited extent of coast and a short period.

It has been stated on the authority of Dr. Traill,* that at

* Pro. Lit. and Phil. Soc., No. II, p. 69.

low water of spring tides the foundations of houses could have been distinctly traced on Hoyle Bank at a recent period. It does not appear that Dr. Traill ever saw the objects said to be foundations; but I think the changes noted from 1687 to 1862 conclusively shew the utter impossibility of any such remains having been traced in the situation assigned, and that the observer, whoever he might be, was mistaken. I think we may also conclude that the church and churchyard are equally mythical, and worthy of being chronicled with the noble Roman who was alleged to have been disinterred at Runcorn.

If these conclusions be assented to, it may perhaps be urged that the waste took place prior to Collins's time: therefore let us try to trace back from known and recorded history the probable course of preceding events.

The clue we possess is the knowledge of the effects which streams of water and sandbanks produce on each other, as manifested during the last 180 years.

If the eastwardly growth of Hoyle bank, since Collins's survey, has had the effect of closing Hoyle lake, and, during the process, of driving the tidal current towards the east, it is reasonable to suppose that prior to that date the east side of Hoyle bank lay more to the westward—that is, that the delta of the Dee was smaller, and consequently that the tidal current in Hoyle lake was also more and more to the westward, and that, in the course of its mutations, it *may* even have coincided with the existing Hilbre swatchway. How much further it may have trended to the westward, if any, it is not necessary now to conjecture or examine. In its mutations the tidal stream was followed probably by Dove spit, which would consequently extend further westward, just as we have seen it moved eastwardly with the deflection of Hoyle lake in that direction. As the stream through the Horse channel gained preponderance over that in the lake, Dove spit underwent further changes, and its projection was reduced.

The more westing we suppose Hoyle lake channel to have had, beyond the point of equilibrium between the streams through Hoylake and the Horse channel, the less protection would be given to the Leasowe shore against the latter stream, and, consequently, it may be thought that at this interval the sea encroached and caused the destruction of the forests, (though if they were artificially planted they should be called plantations,) and also of the village including the church and churchyard.

But it is to be observed, that in the opinion of many by whom the subject has been considered, it is thought highly probable that at one time there was an entrance to Wallasey pool on this very Leasowe shore, an opinion which is supported by the very peculiar inclination of the surface of Bidston marsh, which rises upwards from Wallasey pool to the sea shore, indicating that the sea-mouth of the pool was dammed up by the drift sand. The hill on which Wallasey and its dependencies stand ceased to be an island when the strait was converted into the marsh and pool.

According to Mr. Smith's section of Bidston marsh, before referred to, the thickness of strata deposited on the normal red clay formation is—alluvial soil from a few inches to six or seven feet, say $3\frac{1}{2}$ feet; peat deposit from two or three feet to twelve or fifteen, say $8\frac{1}{2}$ feet, and white sand three feet; or a total average of fifteen feet. Mr. Cunningham gives the thickness of deposit on the clay formation as eight feet;* a difference indicative of a clay ridge or bar at the junction of the pool with the sea, similar to the rocky ridge between the Mersey and the Rock channel. To some extent it resembled a weir, the stream over which would not be powerful, and would exist at the earlier part of the ebb and the later part of the flood.

* Pro. Brit. Assoc. 1854, p. 81.

As the surface of the marsh on the line of Mr. Smith's sections would be lower than where Mr. Cunningham's first section was taken, the bar would keep back a larger body of water in the pool to flow out into the river than if the surface were higher.

During the existence of the sea-mouth to the pool, the delta of the Mersey, now called Burbo bank, (formerly Brazil bank and North bank, indicative of separate formation and independent existence,) which has its nucleus on the rocky bar before mentioned, at the eastern extremity of the Rock channel, would be much smaller, its growth westwardly being due to, or coincident with, the closing of this mouth of the pool, the especial influence of the westerly winds being recorded in its growth northwardly and upwards. If I pursue the investigation of this subject on the Lancashire coast I shall have an opportunity of offering further remarks on the changes in Burbo bank.*

In the absence of positive information the propositions

* After I finished reading this paper, Mr. Thomas Dawson, M.R.C.S., shewed me an imperfect copy of a pocket atlas, from his extensive collection of publications of local interest, entitled "The Kingdome of England and Principality "of Wales exactly described, whith euery Sheere and the small townes in euery "one of them, in Six mappes, Portable for euery man's pocket. The first be- "ginning in Scotland and one sheere in England, Northumberland, and so to "Newcastle; the second hath his head at Newcastle and extendeth it selfe, all "Durham, Westmoreland, Cumberland, Yorkeshire, Lancastshire, and part of "Lincolne Shire; the third hath Norfolke, Suffolke, Cambridge, Bedford, Hart- "ford, Buckingham, Oxford, Northampton, Warwicke, Huntington, Lecesster, "and Rutland, part of Lincolne, Nottinghame, Darby, Glocester, Barkeshire, and "Essex; the fourth map runnes itself, all Shropshire, Cheshire, Stafford, Woster, "Heriford, most of Wales, Anglesey and part of Pembrokeshire; the fift map "houldeth the south of Wales, and Gloster, Somerset, Dorset, Deuon, and Corn- "wall, part of Wiltshire; the sixth mappe contains Kent, Southsex, Surrey, "Middlesex, Barke and Hampshire, part of Essex and Wiltshire, the small prikes "boundeth euery Shire. Useful for all Comanders for Quarteringe of Souldiers, "and all sorts of Persons that would be informed where the Armies be; neuer so "commodiously drawne before this, 1644. Described by one that trauailed "throughout the whole Kingdome for its purpose. Sold by Thomas Jenner at "the south entrance of ye Exchange. W. Hollar fecit." In the maps Nos. 2 and 4, Wallasey is represented as an island. Though it is impossible to place implicit reliance on maps of so old a date, this evidence is corroborative of the hypothesis that Wallasey pool had a direct communication with the sea, as described above.

just enunciated are ne ssarily speculative; they are based upon the changes recorded by the charts and on the supposition of a sea-mouth to Wallasey pool, which I did not originate, but which has met with general adoption by those who have given the littoral changes in Cheshire their consideration. I am not aware of any serious dissent from this supposition, and so, I think, it may be adopted as a probability, amounting, in the absence of objections, to a fact. The deductions I have drawn from the premisses, I believe, will be admitted as probable by every hydrographer, and by every engineer who has given subjects of this nature careful consideration. Under any circumstances it is scarcely conceivable that Hoyle sand, or Burbo bank, was ever part of the main land; that Dove spit was ever more than a spit; or that buildings were ever erected on any one of the three; or that, if they were built, their remains could have survived all the mutations we have traced, to any recent period; nor, I think, will any one now admit the possibility of cows having grazed on Hoyle sand, unless they were sea-calves; though, if herbage could only be found there, cattle-feeding might prove an economical expedient for growing salt junk.*

Reverting to the weir-like bar which appears to have existed on the Leasowe shore, allow me to direct your attention to the perfect trap thus formed for catching any matters brought down the river on the top of the tide. If we assume the surface of the marsh at the edge to be twenty-two feet above the Old Dock sill, a deduction of eight feet, the depth from that surface to the clay ridge, would leave that ridge fourteen

* When, in March, 1865, I applied to Lord Mostyn for permission to see the map shewing the cows grazing on Hoyle sand, he replied he would be happy to shew me an old map of the Dee and Hoyle bank bearing date 1732; and when I visited Mostyn I was told the chart I saw was the oldest there. It was Mackay's, and is in fact a copy of Collins' revised so far as to shew the changes the Dee had undergone. The marvellous document which recorded grazing on Hoyle Bank, in all probability never did exist; but, it is on evidence almost equally apocryphal, that the growth *in situ* of the forest at Leasowe is to be accepted by unprejudiced minds!

feet above the Old Dock sill, consequently the water would pass over at spring tides only. If, then, the peat from Chat Moss, Hough Moss, or any other bog, were brought down the Mersey at spring tides, it would be carried by a gentle current over this bar, and stranded on the adjacent sea coast; when the first of the ebb was gone, or at neap tides, the deposit would be in the pool, within the bar. The tidal establishment off Hilbre being earlier than at Formby, the first of the ebb would naturally pass off through Wallasey pool as long as the height of the bar allowed it to escape; when the level of the stream was reduced too low for this exit, slackwater would ensue within the bar, a state highly favourable for deposition.

The inequalities in the thickness of the peat in Bidston marsh are explicable if attributable to the capricious influence of local currents; but are wholly inexplicable if they represent growth *in situ*. The thickness of growth in a bog depends, *cæteris paribus*, on the level at which the water ceases to be stagnant and escapes; as the surface of water is level the surface of the bog must be level or nearly so; and variations in thickness must be confined to those which arise from irregularities in the bottom of the basin. According to Mr. Smith's sections the surface of the sand which underlies the peat in Bidston marsh is regular; so that we are compelled to infer some extraneous influence to explain irregularities ranging between two or three feet and twelve or fifteen feet.

Again, if there was a mouth to Wallasey pool on the Leasowe shore, how was it that the forests or plantations grew there? Elms, indeed, like the neighbourhood of running streams, provided they be fresh, but even then they do not grow across the stream; and I am not aware that elms, or oak, or birch, or fir ever grow in tidal waters.

These remarks have extended to such length I must defer

to another occasion an examination into the changes which have taken place between the Mersey and the Ribble. The facts bearing on that inquiry are very interesting; they place the probabilities of peat deposition in a different aspect from those which have been noticed this evening, and appear to me to confirm the supposition I have expressed as to their derivative nature.

In conclusion I beg to submit for your consideration a brief summary of the allegations on each side.

The older hypothesis affirms :—

1. That the peat and forest remains are *in situ.*
2. That the forests were artificially planted by a barbarous people.
3. That the trees so planted attained a gigantic size, the roots of some striking down through a bed of sand, two to three feet in thickness, into a bed of clay.
4. That in certain situations there have been successive plantations.
5. That the strata intermediate between the several plantations were deposited in water.
6. That the land has therefore been submerged, in some cases twice since the growth of the forest plantation.
7. That in some way, unexplained, the water was excluded during the period occupied by the growth of the plantations.
8. That there was a Roman settlement in the vicinity of Great Meols.
9. That the remains of coins and fibulæ are the only positive evidence of the existence of this settlement.
10. That it would be morally certain the Romans were acquainted with the neighbourhood of Great Meols, even

without the numerous evidences in the shape of upwards of 5000 coins and fibulæ.

11. That the sea has encroached greatly on the land.
12. That this is proved by the remains of the groves and plantations now submerged.
13. That the destruction of the old lighthouse which existed prior to 1761, is further evidence.
14. That the graveyard discovered by Nimmo is further evidence; that there were hundreds of bodies in this cemetery, deposited with all due regard to the usages of consecrated ground, side by side, in an easternly direction, the priests being laid in the reverse position; that gravestones were used, and in existence when the discovery was made, some of which were removed to Wallasey churchyard.
15. That a church formerly stood far out upon the beach, considerably to the northward and westward of the tide's flow.
16. That this church represented one of medieties of Wallasey parish.
17. That the church and its churchyard disappeared at the close of the seventeenth century.
18. That the traditions of the church and churchyard and of their locality survived so late as 1828.
19. That the remains of buildings have been seen on Hoyle bank &c.

The opinions I have ventured to enunciate are as follows:

1. That all the remains of forests and peat are, like the sand and clay, alluvial.
2. That the ancient remains found associated with the peat are appurtenant to the original localities from which the peat is derived, and may furnish a clue to identify those localities wherever they may be.

3. That, since the latter part of the seventeenth century, authentic records show that the encroachments of the sea have been slight and temporary; but that the growth of land in the sea, in the shape of sandbanks, has been very great, and, on the average, permanent.
4. That the Roman settlement in, or near the site of Great Meols; the church, with the graveyard, its tenants and tombstones, and its ecclesiastical regulation and privilege; the lighthouse prior to 1761; and the buildings and cows on Hoyle sand are all equally mythical.

Some of the facts and deductions on both sides have been submitted to you; when the case for the other side is closed you are asked to return a true verdict according to the evidence.

[In Dr. Hume's closing paper, q. v., he stated that the quotation from Leland, given in my communication to the Polytechnic Society, April, 1865, was incorrect. At the conclusion of Dr. Hume's paper I stated that I had been furnished with the quotation by a friend; that it was some years since I had referred to Leland; that I would do so again; and append here a note of the result. I have, therefore, to say that I find that, to give coherence to Leland's account, the gentleman who furnished me with his transcript had joined the several passages together. In doing this I am sure he acted in perfect good faith, but he has led me into an erroneous inference; and, certainly, if I had made the transcript myself, I should have given the words in their exact order, or explained any modification I considered desirable. As stated by Leland, I think it is clear that only a part of Chat Moss was carried away by irruption; the extent is quite undefined, but probably it was limited. This does not materially affect my position, as I never supposed that more than a small part of the peat deposited on the shores of the river and bay was derived from this occasion. In my former paper I observed, "If the immense extent of moss bordering the upper "part of the Mersey, and the sea coast between the Mersey and the "Ribble, be considered, there cannot be any difficulty in *ascribing to a* "*similar origin* all the various deposits of peat which have been found "on both sides of the Mersey &c." In conclusion I beg to call atten-

tion to Dr. Hume's undertaking that, in his concluding paper, he would "prove that no such eruption, or translation, as alleged, had ever taken "place from Chat Moss." I quote from the report in the *Daily Courier*, 10th November, 1865. How far this pledge has been redeemed the reader can judge. At the meeting of the Polytechnic Society on 12th March, Dr. Hume denied having given this pledge; but my own recollection and the testimony of other gentlemen present on the occasion corroborate the accuracy of the *Courier's* report. If such a statement was incorrect why did not Dr. Hume have the error amended at the time, when, according to his phraseology, he was "publicly appealed to?" If he does not amend every erroneous statement connected with his own name, why should he expect "the eight gentlemen" to correct the statement, also in the *Courier*, concerning the graveyard? Leland's account of Chat Moss will be found in the third edition, 1769-70, vol. 5, p. 95, fol. 83; and vol. 7, p. 48, fol. 56. It will be seen that in the quotation given in April, 1865, the spelling is also varied.]

ON THE MICROSCOPIC FUNGI OF THE DISTRICT AROUND LIVERPOOL.

By R. G. McLeod Esq.

(Read 1st February, 1866.)

No apology is needed, I presume, for bringing such a subject before the notice of the Historic Society.

The micro-fungi form a department of Cryptogamic botany, which up to the present time has been totally neglected by our local botanists; the reason, without doubt, that has deterred them from turning their attention to this interesting study, is the absence of all literature in the English language containing specific descriptions of these minute plants. The want of a proper guide to the systematic study of this diminutive flora has been much felt. That want, to a certain extent, has now been supplied by Mr. M. C. Cook of London, who has published a handbook to the microscopic fungi parasitic on living plants, to which particular branch this paper is principally confined.

The micro-fungi, many of which attack other vegetables in the early stages of their growth, are known popularly by the names of blights, brands and mildews. They are chiefly found upon the leaves and other annual productions of plants. They are very minute, but remarkably prolific, affording extraordinary instances of the vast number of distinct individual lives which can be accumulated in an exceedingly small space. According to estimates deduced from the most careful investigations, it has been ascertained that a single cubic inch will contain a progeny of more than two hundred and nineteen thousand five hundred and twenty

trillion spores or germs of vegetation—a number not only greater than that of all the human beings, but of all the warm-blooded animals that ever lived upon the earth since the moment of its creation. In consequence of their minuteness, they are dispersed through the atmosphere, not like smoke merely, but like invisible vapour.

The question is naturally asked, why this prodigious fecundity? why this immense profusion? The answer is this. The fungi, as a class, perform a highly useful office in creation. Existing only by the absorption of fœtid exhalations, and rapidly depriving them of their insalubrious properties, they execute duties analogous to those of certain tribes of insects, and in this respect have been appropriately associated with these animals as the scavengers of nature. How disgusting to the eye, how offensive to the smell would be the whole face of nature were the vast quantity of putrid and decaying matter, daily falling to the earth from various sources, suffered to remain until gradually dissolved by the rain or decomposed by the elements! That it does not thus offend us, we are indebted to inconceivable hosts of scavengers, both animal and VEGETABLE, which attack it the moment it falls, and speedily consume all the liquid and noisome particles, leaving nothing but the dry dust, which is soon scattered by the winds. With regard to the parasitic fungi, a difference of opinion exists amongst naturalists as to whether they are the cause or effect of disease. Some think that the spores of fungi, coming into contact with the plant, act both as the predisposing and exciting cause of disease; others, without doubt more correctly, think that some change is first produced in the cells of the plant which enables the spores to find a nidus, and then the disease goes on rapidly, assuming a peculiar type on account of the presence of the fungus; in the same way as vegetable organisms, found in diseases of the skin, are not to be looked upon as the origin

of the disease, but as being developed in textures previously morbid, and as giving often a peculiar character to the disease. Berkely attributes the potato disease entirely to fungi. With all due deference to so learned an authority, I beg to differ. The view which seems to be most consonant with the phenomena is, that changes are induced by cultivation in the cells of the potato which render it liable to disease. Atmospheric influences are thus enabled to act upon it so as to cause alterations in its cells; putrefying azotised matter accumulates and is carried to all parts of the plant, causing a struggle between vital and chemical forces, inducing decomposition by a process of fermentation. The azotised matter, in a condition to act as ferment, is produced by the state of the season, deficiency of light, rainy weather and other meteorological causes. The moment decomposition sets in, the spores of the fungi, true to their instinct, awake to their work. So let it be clearly understood that their province is not to cut down the strength or impede the healthy growth or action of any one production of nature; for that would display an imperfection in the system altogether inconsistent with and unworthy of its divine origin. It is only when, in consequence of a local or temporary cause, some organic being, or PART OF AN ORGANIC being, is in excess of what the healthy condition of its species can bear in the proper balance of the system, and is therefore unwholesome, in short, when putrefaction would ensue and produce either a poisoning or a waste, that the spore of the fungus awakens to its duty. Thus we see that the spore of a fungus, only the $\frac{1}{219,520,000,000,000,000}$ of an inch, though a small matter in itself, is of vast importance in the economy of nature in maintaining the balance of life. So do we see that mankind are the fools of their senses as to great and small; and that the sooner that vulgar prejudice which despises minuteness and idolizes magnitude, is made aware that these are only com-

parative terms the better; for even philosophers themselves often yield unconsciously to the impressions that magnitude is calculated to produce on our external senses.

In conclusion, allow me to hope that we shall soon have numerous workers in this new and interesting branch of microscopic research. If any one thirst for discovery, he will be certain to meet with success in this comparatively unknown field; for within the last twelve months five new species have been discovered by myself in the neighbourhood of Liverpool. Certainly some of the micro-fungi are the most unpromising objects to the naked eye which could well be imagined; but let us bring the highest powers of our microscopes to bear upon them, and we shall not fail to exclaim with the poet—

> "These are thy glorious works, Parent of Good;
> Thyself how wondrous then!
> To us invisible, or dimly seen
> In these thy lowest works; yet these declare
> Thy goodness beyond thought and power divine!"

ÆCIDIACEI.

Genus Æcidium,

Æ. Albesceus, Grev.—Moschatel cluster cups; on leaves and petioles of Adoxa moschatellina; not uncommon. April.

Æ. Epilobii, D. C.—Willow herb cluster cups; on the under side of leaves of Epilobium montanum, rarely on the upper; common. June to August.

Æ. Tragopogonis, Pers.—On stems, leaves and involucres of Tragopogon pratensis; common on the shores of the Mersey. May to June.

Æ. Berberidis, Pers.—Berberry cluster cups; on leaves of Berberis vulgaris; not common. May to July.

Æ. Periclymeni, D. C.—Honeysuckle cluster cups; on leaves of Lonicera Periclymenum; not common. June to August.

Æcidium Ranunculacearum, D. C.—Crow foot cluster cups; on leaves of R. ficaria, &c.; not common. Spring.

Æ. Valerianacearum, Dub.—Valerian cluster cups; on the under surface of leaves of V. dioica; rare. June to July.

Æ. Asperifolii, Pers.—Borage cluster cups; on leaves and stems of Lycopsis arvensis; common. Birkdale, September. The parts of the leaves on which it occurs are rendered concave on one side and convex on the other, so that by pressure in drying, this plant looses its character.

Æ. Urticæ, D. C.—Nettle cluster cups; on stems and leaves of nettles; common. June.

Æ. Compositarum, Var. c. *Tussilaginis,* Pers.—On the under surface of leaves of coltsfoot; very common. Autumn.

Æ. Compositarum, Var. d. *Jacobææ,* Grev.—On leaves of Souchus arvensis; Southport. June to August.

Æ. Violæ Schum.—Violet cluster cups; on leaves, petioles and sepals of Viola canina; common. May to June.

PUCCINIÆI.

Genus Aregma.

A. Mucronatum, Fr.—Rose brand, on rose leaves; common. August.

A. Bulbosum, Fr.—Bramble brand, on bramble leaves; very common. August.

Genus Puccinia.

P. Graminis, var. B. Arundinis, Grev.—Plentiful on the shore at the back of Speke Hall; on Phalaris arundinaceæ. August.

P. Polygonorum, Lk.—Polygonum brand; on various species of Polygonum; common. June to August.

P. Menthæ, Pers.—Mint brand, on leaves of Mentha hirsuta, &c.; very common. August.

P. Compositarum, Sch.—Composite brand, on leaves of Centaurea nigra, Hieraceum sylvaticum, Lapsana communis, &c.; very common. August.

P. Glomerata, Grev.—Ragwort brand, on leaves of Senecio Jacobæa. Birkdale and Gilbrook; rare. August.

P. Anemones, Pers.—Anemone brand, on A. nemerosa. Woodside. April and May.

P. Calthæ, Lk.—Marsh marigold brand, on Caltha palustris. Birkdale; rare. September.

P. Violarum, Lk.—Violet brand, on violets; very common. August.

P. Saxifragarum, Schl.—Moschatel brand, on the stem and both surfaces of the leaves of Adoxa moschatellina. Bromborough Woods; not common. April.

P. Pulverulenta, Grev.—Great willow herb brand, on leaves of Epilobium hirsutum. Gilbrook; common. August.

P. Prunorum, Lk.—Plum tree brand, on Prunus spinosa; not uncommon. September and October.

CÆOMACEI.

Genus Tilletia.

T. Caries, Tul. Bunt.—On wheat; very common. August.

Genus Ustilago.

U. Segetum, Ditm.—Corn smut, on the ears of corn and grasses; very common. August.

U. Urceolorum, Tul.—Sedge smut, on Carices; common. August and September.

Genus Uredo.

U. Potentillarum, D. C.—Potentilla uredo, on leaves of Agrimona rupatoria and other Rosacea; common. July.

U. Orchidis. (Martin's.) (New British species.) On Listera ovata and Orchis latifolia. Crosby sandhills. June, 1865.

Genus Lecythea.

L. Ruborum, Lev.—Bramble rust, on the under surface of bramble leaves; very common. July and August.

L. Rosæ, Lev.—Rose rust, on the under surface of rose leaves; very common. August, September.

L. Populina, Lev.—Poplar rust, on the birch nut; uncommon. June and July.

L. Epitea, Lev.—Tawny willow rust, on the under surface of willow leaves. Birkdale; not common. August.

L. Mixta, Lev.—Orange willow rust, on both surfaces of the leaves of willows. Birkdale; not common. August.

L. Saliceti, Lev.—Common willow rust, on the under surface of willow leaves; common everywhere. August.

Genus Trichobasis.

T. Rubigo-vera, Lev.—Round corn rust, on grasses and corn; extremely common. July to September.

T. Linearis, Lev.—Long corn rust, on leaves and sheaths of corn and grasses; not so common as the last. July to September.

T. Senecionis, B.—Groundsel rust, on Senecio vulgaris at Garston, on the road to Speke Hall; and more common on Senecio sylvaticus, Bidston hill and Storeton quarry. August.

T. Cichoracearum, Lev.—Hawkweed rust, on Carlina vulgaris, Apargia hispida, centaurea nigra, &c.; very common. August.

T. Labiatarum, Lev.—Mint rust, on Mentha hirsuta. Speke woods, Bebington and Gilbrook; common. August.

T. Fabæ, Lev.—Bean rust, on beans. Bromborough. August.

T. Suaveoleus, Lev.—Sweet smelling rust, covering the whole under surface of the leaves of cnicus arvensis. Birkdale; not common. August.

T. Polygonorum, B.—Knot grass rust, on polygonum aviculare and P. persicaria; common. July to September.

T. Violarum, B.—Violet rust, on leaves and petioles of violets; common. July and August.

Genus Uromyces.

U. Apiculosa, Lev.—Short stemmed rust, on Lathyrus pratensis. Red Noses, New Brighton, and on clover in fields about Walton Gaol; not uncommon. September.

U. Ficariæ, Lev.—Pilewort rust, on Ranunculus Ficaria. In damp woods; not uncommon. June.

U. Intrusa.—On Alchemilla vulgaris; common. July.

Genus Coleosporium.

C. Tussilaginis, Lev.—Coltsfoot rust, on the under surface of the leaves of Tussilago forfara; extremely common. Autumn.

C. Pingue, Lev.—Tawny rose rust, on the nerves and petioles of the leaves of roses; very common on the sandhills on both sides of the Mersey. July, August.

C. Petasites, Lev.—Butterbur rust, on the under surface of the leaves of Tussilago petasites; not uncommon. Autumn.

C. Souchi arvensis, Lev.—Sowthistle rust, on Souchus arvensis; common. July.

C. Rhinanthacearum, Lev.—Cow wheat rust, on Euphrasia officinalis; very common. August, September.

ERYSIPHEI.

Genus Erysiphe.

E. Linkii, Lev.—Mugwort blight, on the under surface of leaves of Artemisia vulgaris. Bootle and Birkdale; common. September.

E. Lamprocarpa, Lev.—Composite blight, on Plantago major. Plentiful in fields about Wallasey Church. September.

E. Graminis, D. C.—Grass blight, on leaves of grasses; common. August, September.

E. Martii, Lk.—Pea blight, on leaves of cultivated pea; common. September.

E. Communis, Schl.—Buttercup blight, on polygonum aviculare, Lathyrus pratensis; extremely common. August and September.

E. Horridula.—New British species, on Cynoglossum officinalis. New Brighton. September, 1865.

HELMINTHOSPORIACEÆ, Corda.

Genus Cladosporium, Lk.

C. Herbarum, Lk.—On Iris-Pseudoacorus and various grasses; very common. August.

Genus Polythrincium, Kze.

P. Trifolii, Kze—Forming black dots on clover; very common. August.

TUBERCULARIACEÆ, Corda.

Genus Tubercularia, Tode.

T. Vulgaris.—On dead sticks, forming little tubercles of a reddish colour; very common. August.

T. Vulgaris Var B. rubi.—On bramble; common. August.

SPHÆRIACEI, Fries.

Genus Sphæria, Haller.

S. Prunastri.—On decaying branches of Prunus spinosa; common. April.

S. Hederæ.—On leaves of ivy, in hedges, and about old buildings; common. October and November.

Genus Xylonia, Pers.

X. Rubrum.—On both surfaces of the leaves of Prunus spinosa; common. Autumn.

BYSSINI, Corda.

Tribe 2. PHYLLERIACEI, Corda.

Genus Erineum, Pers.

E. Padi.—In round patches, on Prunus padus; common. May.

CÆOMACEI.

Genus Cystopus.

C. Candidus, Lev.—Crucifer white rust, on Capsella bursa pastoris; very common. July.

PUCCINIÆI.

Genus Trichobasis.

T. Fallens. (New British Species.) Spots obliterated. Sori amphigenous, numerous, scattered, subrotund brown, surrounded by the remains of the ruptured epidermis. Spores subovate, pedicels short, hyaline evanescent; epispore verrucose. (Uredo fallens), Demz. Amr. des Sc. Nat. ser. 3, iii, p. 357; pl. Crypt. Exs. ed. i. n. 1325; ed. ii, n. 725. On Vicia sepium, intermixed with the puccinia hereafter described. (Gilbrook.) Though this is undoubtedly nothing more than the Uredo form of puccinia fallens, I have preferred assigning to it a name, until a revision of the whole of this order takes place, and the forms under which the same species occurs cease to be designated by different names, and become associated together under their proper designation. D. B. F. M. M. C. C. 9, 1865.

Genus Puccinia.

P. Fallens. (New Species.) Maculis obliteratis; Soris amphigenis, paucis, sparsis, rotundatis; sporidiis obovatis longi pedicellatis, fulvis vix constrictis spisporio lævi. On vicia sepium. (Gilbrook.) Sori, few and small, scattered, intermixed with pustules of Trichobasis. Sporidia obovate, on rather long pedicels, of a tawny colour, and slightly constricted at the septum. Epispore, smooth, apparently not common, and, as far as I can ascertain, undescribed. D. B. F. M. C. C. p. 9, 1865.

CÆOMACEI.

Genus Uromyces.

U. Polygoni. (New British Species.) Cauline. Sori, elongated and confluent, convex, surrounded by the remains of the ruptured epidermis. Sporidia subglobose or globose, smooth, yellowish brown; pedicels very long, thick hyaline, persistent. Fuckel-fungi Rhen, Exs. n. 399 ("*Capitularia* "polygoni"); Rabh. Bot. Zeit. 1851, p. 449; Herb. Myc, ed. 1 n. 1995; Fung. Eur. n. 185. "*Uredo longipes,*" Lasch; U. clavigara, Lasch, fide, Rabh. "*Puccinia vagi-*"*nalium,*" Link. sp. pl. (in part), on the stems of Polygonum aviculare; Bootle. I do not see that this species offers any features whereby its separation from Uromyces can be maintained. Hence I have not adopted Dr. Rabenhorst's genus Capitularia. The same may be said of Fuckel's genus puccinella, which I believe that the author himself has abandoned. D. B. F. M. C. C. p. 10, 1865.

Genus Uredo.

U. Orchidis. (New British Species.) Mart. Amphigenous, spots reddish brown. Sori subrotund, arranged in circles, often confluent. Sporidia subglobose, golden yellow. Mart. H. Mosq. 229; Cooke, Fungi Brit, Exs. n. 61. Uredo confluens v. orchidis, Alb. and Sch. p. 122. Uredo circinalis *a* orchidis, Strauss, wett. Amr. ii, 88. Cæoma orchidium Lk. sp. pl. ii, p. 9. On leaves of Listera ovata and orchis latifolia; Crosby. June, 1865. D. B. F. M. C. C. p. 12.

SOME INTERESTING FEATURES OF A NEGLECTED ROMAN STATION, BROUGH-UNDER-STAINMOOR.

By Henry Ecroyd Smith.

(Read January 4th, 1866.)

That Brough-under-Stainmoor in Westmoreland is the site of a Roman Station no English antiquary has, I believe, refused to accept as a fact, although some sceptical writers, apparently with very little reason, have questioned if not denied its identification with the *Verteræ* of the Roman *Itinera*, as fully accredited by our good old authorities, Camden, Horsley, Burton and Gough. It is satisfactory, however, to find the ablest archæologists of the present day coinciding with their worthy predecessors—the approaching lines of the Roman roadway being still traceable, whilst the distances from clearly recognised stations alike prove confirmatory of the earlier appropriation. Horsley remarks*—"Verteræ is no doubt rightly fixed at *Brugh-under-Stanemore*. "The course of the military way is absolutely certain. The "remains are generally so grand, and it is so rarely interrupted, "and then only for so short a space, that we never have the "least difficulty about it. And thus it continues to go on by "Bowes to Cataract."

The approaches from the south-east are yet unusually

* *Brit. Rom.*, p. 410.

interesting to the antiquary, who, starting say from Brough Hall, near Catterick Bridge, Yorkshire, the site of the ancient Cataractonium, pursues the Watling Street to Greta Bridge, near which is a small Roman camp, situate between the Greta and one of its no less picturesque tributaries called Tutta, a name evidently derived from one of the presiding goddesses of the Latins, *Tutela*. About this intrenched mound, as the poet says—

> "Raised by that Legion, long renowned,
> "Whose votive shrine attests their claim
> "Of pious, faithful, conquering fame,"—

several inscribed stones, including an altar dedicated by the *Sixth* legionaries, have been found, and are now preserved at the neighbouring Rokeby Hall. Hence the visitor proceeds directly west, leaving Barnard Castle to the north, through Bowes, formerly Lavatræ, where inscribed stones have also occurred, and commences the rise of Stainmoor or Stanemore, one of the most dreary and inhospitable of the many elevated, rocky and barren moorland regions which, throughout its great extent, mark the western confines of the Yorkshire province. Dr. Gale seems to have dubbed this "Arabia Petræa" of the north of England, *Saxetum*. From Bowes to Brough the distance is only about thirteen miles; yet throughout the greater portion no house is to be met with save the *Spittal* and toll-house near the summit. The former (often spelled *Spittle*) is a modification of the ancient hospital given to the Nunnery of Maryke before 1171. A quarter of a mile in advance is the toll-gate and house where formerly the remains of a Roman miliary or mile stone was standing, all the relics of its original inscription being COHV. A few hundred yards nearer Brough, part of the shaft of a stone pillar or cross appears, called indifferently *Roy*, *Rey* and *Rere* Cross; in some recent maps (as Phillip's) being still more barbarously corrupted into *Bear-cross*. An ancient pillar would seem to

have been erected here by a so-called *King Marius,* " supposed " by some to be Arviragus the Briton ; others contend for his " being that Marius who was elected Emperor in opposition " to Gallienus, *and is reported by historians to have been so* " *strong that, instead of veins in his fingers, he had* " *sinews.*"* (!) In place of the earlier monument, for such there was, by whomsoever raised, a cross was erected shortly subsequent to the Conquest, to commemorate William's ratification of his treaty of peace with Malcolm of Scotland, the latter having thereby agreed to do homage to the Conqueror for that part of Northumberland lying between the Tweed, Cumberland and this very Stanemoor, where moreover it was arranged " to raise a cross with the King of England's image " upon one side, and that of the King of Scotland on the " other. It was called Rere Cross, that is to say, the Cross " of the Kings."† The relic of this shaft now retains no mark. It is fixed in a socket of stone close to the road side, and in the midst of one of the finest Roman camps existing even in the North of England; and although the surface within is somewhat undulated, yet the various compartments, together with the Decuman and other main gates, can be traced very distinctly. Farther down the western declivity of Stainmoor—to the left of this, *the Maiden Way*—and adjacent to a branch road from it to Caer-vorran on the Wall, a second Roman camp, but of smaller dimensions, is to be seen. It is generally known by the name of " Maiden Castle," in common with others in England, a second existing at no great distance at Old Durham, whilst a much finer example is extant in Dorsetshire. From the following description rendered us by Leland, it formerly exhibited many features of interest now lost, appearing little more than a rectangular

* Treb. Pollio in vit ejus. *Gough's Camden*, vol. iii.

† *Boetius, Hist. Lib.*, xii, p. 267.

earthwork. "Ther is a place an VIII mile plain west from "Bowis a thoroughfare in Richmondshire cawlled Maiden "Castle, where is a great round kepe, a 60 foot in cumpace, "of rude stones, sum smawl, sum big, and be set *in formam* "*pyramidis*, and in the top of them all is set one stone *in* "*conum*, being a yard and half in length, so that the whole "may be counted an 18 foot high, and is set on a hill in the "very edge of Stanemore, and this is *a limes* between Rich-"mondshire and Westmoreland. * * * Maiden Castle, "where now there is nothing but a hill dyked, is hard by the "east side of Wathelyng Street, five miles a this side "Brough."*

From the north-west or mouth of the Eden, which, with its tributaries, waters the district, the ancient approach to Brough lay by Carlisle and Wheallep (now *Whelp*) Castle, the remains of the latter having almost if not wholly disappeared, incorporated, in common with those of the Roman station here, in the buildings of the modern village of Kirby-thore. A short distance thence, and the site of a large camp is reached, 300 yards long by 150 wide, commanded by "a small fort, "called Maiden-hold, which seems to have been a guard-house "or watch-tower of the camp, and by its name may possibly "have some relation to the 'Maiden Way,' at Kirby Thore, "and 'Maiden Castle,' upon Stainmore."† It seems rather difficult to determine which roads or portions of roads properly bore the designation of Maiden way; but so far as the writer can judge, it commences at Solway Frith, the ancient "Itunæ "Æstuarium," proceeding by Carlisle, Wheallep Castle and Brough, over Stainmoor into the Brigantian territory. A northern branch of the same name branched off to the north-

* *Itin.*, v, 116; viii, 70.

† Burn i, 381, 385, *vide Gough's Camden*, iii, p. 412. For remarks upon the etymology of these names, *vide* Mr. Pegge, in *Gentleman's Magazine*, 1755, vol. xxv, 273. Mr. Gough derives Maiden from *Mai-dun*, a great ridge.

east from near Wheallep Castle to Caer-vorran, near Thirlwall Castle (*Magna*), on the Great Wall of Hadrian, passing *en route* an intermediate station by Whitley Castle (*Alione*), where the third cohort of the Nervii erected a palace for the Emperor Caracalla.*

Between Kirby Thore and Brough, by the Roman road, and near Sandford field corner, several considerable tumuli appear, varying from ninety to forty paces in circumference, from the largest of which a sword with curiously engraved handle, and spear heads, with the remains of a helmet and shield, were excavated in 1766, two small camps or outposts lying near upon elevated situations. On this, the western side of the station, the cemetery would be located, and the tumuli may be regarded as the sepulchral mounds raised over bodies of superior officers.

Having thus heralded the remarkable approaches to Verteræ, though necessarily in a very cursory manner, the place itself might with good reason be supposed by readers to have received considerable attention at the hands of antiquaries. Such, however, has by no means been the case; and were it not for the occurrence here of a certain class of objects of great rarity, if not *peculiar* to this station, we should probably possess no recent notice or information whatever concerning a very interesting military post, in despite of its shewn close connection with one of the central stations upon the line of Hadrian's Great Wall, as also with its western termination.

Brough appears to have been almost unregarded by Leland, who merely notes that "Eydon Ryver runnyth within a "Quarter of a Myle of Brough." But even this is an error, inasmuch as the two small streams which here unite their waters form only a tributary of that river, which does not run within a mile and a half of the place. Burton in his *Com-*

* *Gough's Camden*, iii, p. 430.

*mentaries on the Itinerary of Antoninus,** says "Verteræ, it is "thought, stood not far off Itunæ or Eden in Westmoreland, "where it joins itself with other streams. Now it is decayed "into a small village, and its name is turned among us into "Burgh. For our countrymen call it *Burgh-under-Stanemore;* "or, as our monks name it *Burgus sub Saxeto.* Vegetius "tells us that, under the later emperors, small castles, con- "venient for war and well stored with corn for provision, "began to be called Burgi, and that the Burgundians had "their name from living in such; *Paulus Orosius* is sufficient "author. Camden does boldly assure that this Burgh was "this *Verteræ*, both in regard of the exact distance from the "next stations on both sides, Brovoniaca and Lavatræ, our "miles being resolved into the Italick; as also because it "stands upon the *Highway* whose ridge here plainly appears. "The name of this station in the *Notitia* had quite perished, "had it not been recovered out of this place (Antoninus); "for before, it was *Veneris, Veterum*, without sense or proba- "bility of tolerable meaning. But finding it here it seems to "me to have *lasted so long* till the Roman power expired in "the Island."

Mr. John Clayton, in a letter to Mr. Roach Smith,† remarks, "I think it may be reasonably assumed that Horsley "was right in treating the station of Brough-upon- (?) "Stanmore as the *Verteræ* of the *Notitia* and of Antonine's "*Itinerary.*‡ The remains of the Roman road in this district "are very palpable, and mark distinctly the course of the "second Iter of the *Itinerary.* There is no reasonable "ground to doubt that Kirby Thore is rightly assumed to be "Brovonacæ, the next station on the north. Moving south- "ward, we then come to Brough-on- (?) Stanmore, then to

* *Iter II, p.* 120. † *Coll. Antiqua*, vol. vi, p. 119.

‡ *Brit. Romana*, p. 410.

"Bowes-on-Stanmore, and then to *Cataractonium*, of which "there is no doubt. With the fixed points of Brovonaceæ "and Cataractonium, we are, I think, relieved from any diffi- "culty as to Verteræ, which has been a mountain stronghold "in a mineral district. The Eden Valley railroad now "passes (?) the ancient station." The notes of interrogation are the writer's; for, in the first place, Brough is no more situate *upon* Stainmoor than London upon Houndslow Heath; or our neighbouring Birkenhead upon Bidston Hill. It is surprising that Mr. Clayton should have fallen into such an error, inasmuch as the early authors are all very clear, including Horsley, whom he quotes; whilst Burton, as we have seen, emphatically describes it *Sub Saxeto*. Again the Eden valley railway is asserted to *pass* Brough. Hence, most strangers would naturally conclude this town to be, say, within a mile at least of the line, instead of which the nearest station, that of Kirby-Stephen, *situate almost opposite* is *five miles distant!*

Mr. Roach Smith proceeds—"At Verteræ was stationed, "it appears by the Notitia, a body of troops called Directores, "under a prefect, *Prefectus Numeri Directorum Verteris;* "but it does not appear from what country or place these "Directores came; and the same with the Exploratores and "Defensores of the station preceding, and of that following, "Verteræ. *I am not aware that any inscriptions have ever "been discovered at Brough, neither am I in possession of "any clear details respecting the station. This and the "station immediately adjoining do not seem to have yet "received the attention they deserve.*"*

It may be advisable here to introduce a short sketch of the present aspect of Brough, this small town being divided into two sections a quarter of a mile apart, Church-Brough and

* *Coll. Antiqua*, vi, p. 119.

Market-Brough, whilst Brough-Sowerby is an outlying hamlet a mile distant. Market-Brough is the modern town, nestling under rising grounds which swell upward into Stainmoor on the N.E.; it still possesses a market, but since the Eden Valley Railway was opened, has lost its old and daily mail-coach communication with Barnard Castle and has assumed all the dull and drowsy appearance of a south-country town. The historic associations all centre in the hamlet of Church-Brough, where, around the old Church of St. Michael and on the rise towards the early English castle of the Cliffords, cluster the humble cottages and farm-house with its outbuildings, the latter formed from the ruins. A little below the adjacent bridge, but higher than the castle-mound, two mountain streams, the Augill Beck, from Market-Brough, and the Swindale Beck unite, and the vastly increased volume thence accruing, more especially after heavy rains, undermines the north base of the mound and the bank of an opposite meadow, when the earthy matter being carried away, coins and other relics in metal &c., are deposited among the stones and pebbles of the river's bed. From the mediæval castle having been occupied for many centuries, the result is the occurrence here of numerous coeval remains mixed with others of Roman fabrication, the latter, however, greatly preponderating. In many cases, as in the objects appertaining to the caparison of horses, great discrimination and caution are necessary accurately to determine their paternity. In the neighbourhood all fall under the designation of " Castle's Brass," and as some of the older collectors have unfortunately been in the habit of *cleaning up* what they find, the *brassy-bronze* of the Roman and the brass of the Norman prove similar in colour and it is only in a few small articles of *latten* (or 12-15 century brass) that a more lurid colour appears.

Upon visiting the spot in August last it was the opinion of the writer, which he now holds yet more strongly, that the

Castle, built, it is said, to fortify the pass of Stainmoor by Roger de Meschines,* in the reign of the Conqueror, was erected upon part of the naturally elevated mound, abutting upon the river, *originally* occupied by the *Roman Castrum;* the area being at the same time divided in twain, through the formation of a fosse or moat, yet remaining and of considerable depth near the stream. Now, not only are inscribed stones unknown, but foundations of buildings necessary to attest the precise site of the Roman station are equally absent. Assuming, however, the Castrum to have stood, as suggested, upon the "Castle Hill," a clue to the mystery is at once obtained. The Keep, certainly not older than the eleventh century, yet retains the name of the *Roman Tower*, and probably where the earlier foundations themselves were not availed of *in situ*, the material would be carefully removed for incorporation with, if not as facing to, the massive walls of the Norman fortress.

But if large *débris* of the ancient Verteræ is apparently wanting, abundant evidence of a long continued Roman occupation is supplied in the numberless coins which, in the course of time, have been found, with other articles of use and ornament. Sir George Musgrave, of Eden Hall, possesses, it is said, a collection of these; but perhaps the largest cabinet of Brough relics is that owned by Miss Hill, of Appleby and Bath, collected chiefly by her relative, the late John Hill Esq., who, it is much to be regretted, left no memoranda of the objects, or notices of his experiences and observations upon a site in which he was known to be deeply interested. An exciseman, long located here, but whose name has not reached me and whose address is now unknown, is stated to have made a fair collection, and I believe only the remains of one *local* hoard exist.

* Who also erected the castles of Appleby, Pendragon and Brougham, all in the Eden Valley.—*Vide* Whitaker's *Hist. Craven.*

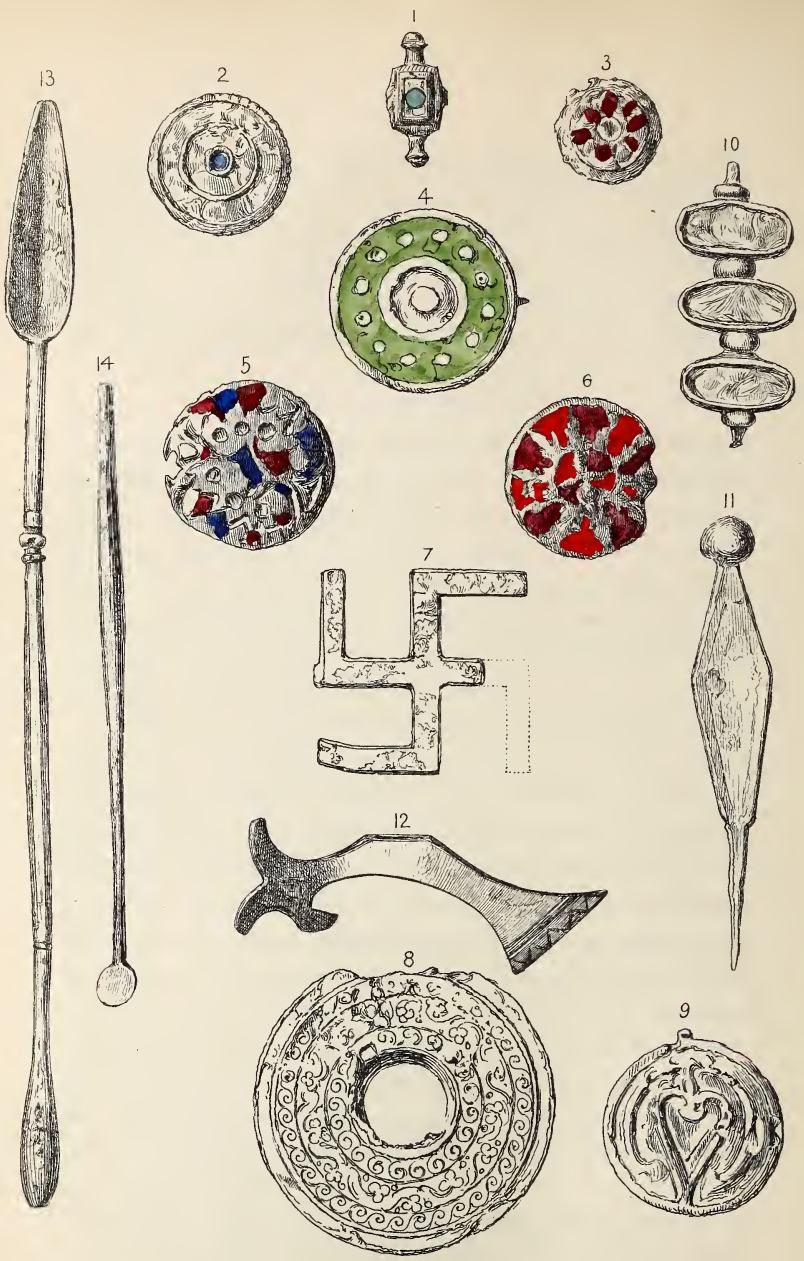
It would appear that most of the coins found here in recent times have, by sale, been dispersed through the country, and it is greatly to be feared are mainly lost to Brough and to its history. It is consequently all the more necessary to record the writer's observations, deduced from what could be seen, and information gathered from collectors, old and young.

Synopsis of Brough Relics.

Coins.—The earliest are of silver, of the Roman Consular families—Antonia, Cassia and others—with large and middle brass of the Cæsars, from Claudius to Domitian and the immediate successors of the latter. Small brass of the later empire are numerous, in very poor condition, showing long service, with *minimi*, or the small pieces presumed to have been made in imitation of these by the abandoned Roman-British population about the fifth century.

Ornaments.—*Brooches* of the harp shape in bronze, common; a few are penannular; one (pl. I, fig. 7) of a scarce rectangular Etruscan design; a few mediæval *fermails* or ring-brooches. One object, representing a *Roman standard*, (fig. 10) has evidently been fixed in some larger article, and it seems other examples of similar shape have occurred. *Studs* are numerous, many being enamelled in scarlet, green or light blue; a fine round one (fig. 8) has evidently occupied the place of a brooch, perhaps on the shoulder: this rare ornament is one inch and a half in diameter and beautifully engraved with a double border of the *Vitruvian* scroll pattern, an intermediate one of trefoil leaves having been chased with *silver*, two fragments only of which remain. *Beads* of brass, glass and amber, all plain.

Amulets.—Chiefly of bronze, including many varieties of the heart shape (fig. 9 has been looped) and a large proportion of phallæ; one of pewter, lately found, bears an imperial or other bust, and is further described under the head of seals.



ROMAN OBJECTS OF BRONZE.
FOUND AT BROUGH, WESTMORELAND.
THE ANCIENT VERTERÆ

J. E. WORRALL, LITH. 6, PARKER ST., LIVERPOOL.

Domestic Implements &c.—Pins and needles; nails; handles of basins; ligulæ and other spoons, all in bronze; keys, in bronze and iron; pottery, various, including some Samian and a little mediæval.

Weapons.—Spear and lance heads, various.

Horse Trappings.—Rings, hooks, hasps, buckles, tags and ornaments of straps (some mediæval) including the head of a stag in brass and originally gilt.

Pewter Seals.—These articles have already been referred to, but not by name; they constitute as yet *the* remarkable product of Verteræ, seeing that with the sole exception of some half a dozen (two of which belong to a later Roman period), no similar objects are known to have been found at any other Roman station in this country, and so far as the writer is aware such even remain unrecorded on the Continent. When first noticed they were of frequent occurrence, and being undervalued were destroyed. Those preserved are chiefly in the collection of Miss Hill, who probably owns several hundred. Their shape is round, oval or rectangular, the faces impressed apparently from personal seals or stamps with letters &c., with a small proportion from gems. Most of them bear trace of attachment by a thread or string. One gentleman alone has as yet written upon these remarkable objects, and his valuable comments are added with the proviso that pewter rather than lead is their correct designation, inasmuch as they contain a fair proportion of tin.* The writer was assured by the old vandal-blacksmith who, with one of his sons, first collected these pieces, *melting them down by half a pound at a time*, that the produce was ever in the greatest request for soldering purposes by all the tinkers of the country side! The accompanying pl. II depicts twelve hitherto unpu-

* A professional assayer demands *two ounces* of the metal to operate upon—a greater sacrifice of such rarities than can be afforded. In default of the desiderated analysis, however, it may be stated that, in addition to tin, zinc and a small proportion of sesquioxide of iron have been detected.

blished types or varieties of the Brough seals from the writer's small collection (all drawn, like the ornaments, of the actual size), eight of which bear an inscription upon either side—and three upon one side only, the reverse being plain. The remaining four appear to have been struck from intagliate gems and merit a little additional description. No. 9 upon one side displays several letters in an oblong facet, the reverse bearing a thunderbolt below a trophy of arms, with a star upon either hand. No. 10 would seem at first sight to approach very nearly to an example in the British Museum, shortly to be mentioned, in which a bust appears between two capital letters; but on a closer examination of the Brough seal a supposed C in front of the face disappears, whilst the presumed R or B behind the neck becomes resolved into the head of a *caduceus*, suggesting the bust to have been intended for that of Mercury, which is most probable, the apparent beard being merely an incrustation upon the metal. This impression has evidently been originally made with a loop for suspension and been worn as an amulet; the reverse is quite plain. The subject of No. 11, a contest between a satyr and a goat, is of frequent recurrence upon Roman gems, its animated character constituting it a favourite; the form is circular like that of No. 12, which bears a small imperial bust, but this is difficult to appropriate, from the indistinctness of the features.

Mr. Roach Smith, who has engraved upwards of thirty varieties of these seals in his *Collectanea Antiqua*,* remarks—"The leaden seals etched are a new contribution to our English "archæological materials. Similar examples of the Roman "period have not, I believe, been published as discovered in "this country. Three of these and a duplicate were picked "up at Felix-stowe, in Suffolk; the others were found at "Brough, in Westmoreland. These seals were fastened to

* Vol. iii, p. 197, pl. XXXII. The various references to the plates are necessarily omitted.

"merchandize of some kind by strings which passed through "the centre, in the same manner as the leaden seals or *bullæ* "were affixed to Papal deeds; the string was laid across the "molten metal, which was then stamped on one or both sides. "Interesting examples of leaden seals, still attached to the "strings which fastened the bandages of a Greek mummy, "are preserved in the Egyptian department of the British "Museum. Two of them are engraved in pl. XI of Mr. Petti-"grew's *History of Egyptian Mummies*. They are apparently "of the time of the Antonines, if we may judge from the "portraits upon them. Another in the British Museum, "separated from its original attachment, is in the general "Roman collection.* It bears a naked male head between "the letters R and C. These are all the examples I have as "yet been able to consult."

It may be well here to note the discovery of a number of leaden seals in the river Bug (Lithuania), but they prove to be of much later fabrication than our Brough examples. Many of their designs appear identical with potters' marks beneath crocks of an early Gothic period, found also in central Europe. All the impressions are very curious and they seem to bespeak a commingled Greek, Etruscan, Egyptian, Runic and Gothic origin. Through the kindness of the Rev. H. M. Scarth, of Bath, author of *Aquæ Solis*, we are indebted for the illustrations of these remarkable rarities, now exhibited for comparison.

Mr. Roach Smith continues—"The designs upon some of "our seals have been taken apparently from engraved stones; "the owners using them as merchants' or traders' marks. The "others were of a more explicit kind, as they bear inscriptions "which either refer to the nature of the goods to which they "were affixed, or to the makers or traders; or it may have "been to both. At present I have no means at hand for com-

* *Ante*, p. 148.

"parison and cannot confidently apply, towards interpreting "the abbreviated words and the numerals, the formula used "for reading stamps on other works of ancient art. OF. is "probably for officina, as upon the fictile ware, and the "reverses of most seem to indicate personal names. The "country from which they came is also doubtful. Their "general character, however, seems to bespeak a Phœnician "origin; the reverses ZAB and IVB sound very much like "Punic names; the ornaments upon some resemble those on "certain Celtiberian coins, and the last letter upon one seems "decidedly the Celtiberian S."*

In a more recently issued part† of the same valuable work two additional plates of these seals are introduced, with the following observations:—"I am sorry to say I cannot add "much with confidence to the remarks which accompany the "first plate. At the same time I could not hesitate to avail "myself of the opportunity of placing upon permanent and "available record further examples of these seals, *hitherto so "rare as to have escaped the notice of antiquaries.* Two in "the plates have on one side LEGII and on the other EX P. "These may without doubt be attributed to the second legion; "of this type there are several examples (see our pl. II, fig. 2.) "CII NER may be interpreted *cohors II Nerviorum;* CIIAE "may be *cohors II Ælia,* and HIS may mean *cohors His-"panarium.* Another type reads C VII TR; this may mean "*cohors VII Thracum or Trevirorum,* and further varieties "may, in like manner, be explained as indicative of other "cohorts, all probably located in Britain. But it is by no "means so easy to suggest a reason in explanation of the "fact of these seals being discovered in such numbers at "Brough, and so rarely at other places, the sites of Roman "military stations. Not a single example, so far as I am

* *Coll. Antiqua,* vol. iii, 197-8. † *Ibid,* vol. vi, 117–120, pl. 16, 17.

UNPUBLISHED ROMAN SEALS OF PEWTER,
(FOUND AT BROUGH, WESTMORELAND,)
IN THE COLLECTION OF MR H ECROYD SMITH.

J.E. WORRALL, LITH. 6, PARKER ST LIVERPOOL

"aware, has been detected among the miscellaneous remains "found at London, Colchester, Exeter, Wroxeter and other "localities which contain the ruins of Roman towns; so "that it would seem, as the inscriptions appear to indicate, "that these seals were appended to some kind of property "belonging to military bodies. But it is equally difficult to "understand how so many should have found their way to "this particular station; or, on the other hand, to suppose "they were manufactured there, as they appear to have been "used, and indeed must have been; for, being complete, the "holes through them shew the two parts had been united over "the string or silk which attached them to the objects they "were intended to authenticate. * * * The reverses of "some have abbreviations which may be personal names, "while some resemble figures upon coins and gems; among "them was a coin of Domitian in lead. *I am disposed to "assign them all to the higher empire.* One (fig. 2, pl. XVII), "as before observed, does not belong to the collection from "Brough, being no doubt of foreign extraction. It is pro- "bably of the time of Justinian, and may be compared with "figs. 2 and 5 in plate VII of Ficoroni's *Piombi Antichi*, a "work which contains a large number of examples of Roman "seals in lead; *but they throw no light whatever upon those "from Brough.* A few years since two very interesting and "extremely rare leaden seals were found at Richborough, in "one of the rubbish pits outside the *castrum*, and were pre- "sented by Mr. Rolfe to Mr. Mayer. They are of the em- "peror Constantine and apparently from the same matrix. "The inscription round a young laureated head reads— "'Constantinus, P. Aug.' The workmanship is good and "superior to that of most of the coins of the period. Most "probably they had been attached to letters or edicts by "means of a string, the marks of which are perceptible in "both."

After thus supplying all that one of the most able and painstaking antiquaries of our day has been able to state and opine relative to this series of unique relics, it may seem presumptuous in the writer of the present paper to add any remarks of his own. He ventures, nevertheless, to suggest that Mr. Roach Smith's latest observations are the best, and that we must look rather to a military than a manufacturing origin for these pieces, a large proportion of which seem to bear inscriptions more or less abbreviated—embracing the name of a legion, cohort or *manipulus*, and occasionally of some two of these. That lead was worked in the neighbouring hills in ancient times is certain; and this fact strongly favours the supposition of their manufacture, possibly by soldiers from different countries temporarily stationed or quartered here. Difficulties nevertheless still remain, and the question as to how it has resulted that these pieces are apparently found at the station of Verteræ only, to the exclusion of those upon either hand,—to say nothing of far more important and extensive Roman sites throughout this country, inclusive of many in which lead also abounded,—constitutes a mysterious point yet to be resolved.

THE LAKELAND OF LANCASHIRE.

No. II.—Hawkshead Parish.

By A. Craig Gibson, F.S.A., Hon. Curator.

[Read 10th May, 1866.]

The Parish of Hawkshead may be roughly described as forming a parallelogram, measuring about ten miles from north to south and six from east to west. For purposes of local government it is divided into four quarters or townships—namely, Hawkshead, with an area of 4492 acres; Claife, with 4579; Monk Coniston and Skelwith, 5937; and Satterthwaite, 7322 acres—the acreage of the whole parish being 22,330.

Its population in 1861 was 1800. Its annual death-rate I have not been able to ascertain with perfect accuracy.

It is bounded on the north by the parish of Grasmere; on the east by Windermere; south by the parish of Colton; and west by the central line of the vales of Coniston, Yewdale and Tilberthwaite, part of the extensive parish of Ulverston. Though deficient in the grander elements of beauty, so abundant on its immediate north and west, the parish of Hawkshead is by no means destitute of the beautiful. It possesses many varieties of fine, if not of grand scenery. Its bare brown moorlands contrast well with its fertile enclosures and wooded parks—its craggy "knots" and "pikes" with its rounded moraine-hillocks and verdant "hows"—its reedy marshes with its rich meadow-lands—its sombre tarns with

its sparkling lakes—its hirsute coppices with its groves, groups and single trees of stately growth and effective though fortuitous arrangement—and its rude dry-built hovels of undressed native stone contrast forcibly with its handsome and, in some instances, splendid mansions. In short, though it has no lofty mountains, this secluded parish holds within its bounds natural beauties of the most charming and diversified character; and whatever may be said of the comparative tameness of its interior,—the only disparaging criticism I have heard applied to it,—its marginal line runs through scenery whose loveliness is rarely equalled and nowhere surpassed.

Commencing at Elterwater, a small lake formed by the two branches of the river Brathay which drain the convergent vales of Great and Little Langdale, we find that sheet of water almost bi-sected by a low narrow promontory, which projecting morsel of marshy land forms the most northerly point of the parish I am attempting to describe, and also of the County Palatine of Lancaster. The shores of Elterwater fully bear out the poet Wordsworth's remark, that "tarns are "often surrounded by unsightly tracts of boggy ground;" a defect which in many instances might be remedied by drainage.

Leaving the reedy shores of Elterwater, the doubled stream soon acquires a very rocky channel, forms the rapids or falls known as Skelwith Force, and, after passing the romantic little village of Skelwith Bridge and the secluded hamlet called Skelwith Fold, laves the stony bases of the wooded knolls which so strongly characterize this subdivision of the parish.

The bold heights to the southward culminate in a hill called Ironkeld—a name which suggests the proximity of a chalybeate spring, now lost and forgotten, if it ever did exist. Of no great altitude, this eminence commands one of the finest prospects in the kingdom, including the principal hills

of Cumberland, Westmoreland, Lancashire and Yorkshire; while the sheets of water comprised in the view are Morecambe Bay, the Duddon Estuary, Coniston Lake, Windermere, numerous tarns and, as a local authority, with some little obscurity of simile, avers—"Esthwaite, stretching out its "peninsulas *like a silver mirror.*"

The stream of demarcation pursues its lively course past the little church so beautifully situated on one of the wooded knolls I have referred to. It has been the fashion to decry this edifice as rather a blot upon or an anomaly in the scenery here. I take leave, however, to think that it is a pretty and certainly a pleasing feature in the fair landscape, quite in keeping with the native beauties surrounding it. And rich in native beauty this scene must of necessity be admitted to be. "Sweeter stream scenery," said one eloquent lover of the English lakes and their accessories—"Sweeter stream scenery, "with richer fore and loftier back ground, is nowhere to be "seen within the four seas." We cannot wonder at the accomplished Charles Lloyd, the early and life-long friend of Wordsworth, Southey and Coleridge, and the elegant translator of *Alfieri*, taking up his rest at Old Brathay, the unpretending mansion near to the last and most picturesque of the bridges under which this boundary stream passes to join its sister river, the Rothay, from Rydal and Grasmere, and become the principal feeder of Windermere.

Before leaving these fair streams I may mention a fact or two relating to the fish that frequent them. The char—*Salmo Alpinus*—from its rarity and its beauty (in flavour it is not equal to a good lake trout) is the favourite, most celebrated and most sought-for fish of Windermere. In the spawning season it ascends the Brathay, a clean rocky bed being a desideratum with the char, while the trout, preferring sand, takes the Rothay. A very barbarous, wasteful and unsportsmanlike method of taking the char is practised surrep-

titiously in the Brathay during spawning time. The process is called "clicking," and is carried out thus. To a short stiff stick a stout line is attached, having at its further extremity a plummet and a number of strong fish hooks set back to back all round. The fish, tired with their ascent of the rapid stream, flock for rest into the deep eddies or still places, locally called "pots." The armed line is dropped into these pots, the opportunity watched for, and the sudden withdrawal or *click* seldom fails to bring up a spawning char or two. This form of poaching gave rise, some years ago, to a legal question which was oddly decided. A respectably connected person was detected at it and brought before the Ambleside bench for illegal fishing. His advocate insisted that *clicking* was angling, an assumption that was so warmly protested against by the magistrates, one of whom, at least, is a zealous and, of course, an honourable fisher, and so stoutly supported by the other party that at length it was agreed to allow the decision of the case to rest upon this point, and to take the opinion of counsel as to whether the process described were angling or no. The learned counsel referred the magistrates to the definition of angling given in Johnson's Dictionary, namely, "fishing with a rod, line and "hook." The difference between hook and hooks being held to be immaterial, the identity of clicking with angling was established, and the culprit escaped.

The parish boundary-line has hitherto run due east; but at the confluence of the two rivers, close to the town of Ambleside, it turns to the south, following their western bank till they fall into the lake, and then, the same bank of Windermere. For more than a mile here the lake is bounded on its Lancashire side by the fine park surrounding the mansion of Brathay Hall, the seat of Mrs. Redmayne.

In the first quarter of the present century William Green, an artist of considerable talent and great industry, resided at

Ambleside. He published a large number of etched and mezzotinted views of the district, which were much admired and are still greatly in request. He also published, in 1824, a very faithful and, though lengthy, a very readable "Guide "to the Lakes," in two large octavo volumes. Looking at everything with the eye of an artist, and describing all he so looked at in quaint and earnest language, Green has left us, in his "Guide," a mass of very interesting and agreeable observations on the Lake country. As a specimen of his style and as still of pretty general application hereabout, I copy his remarks upon Brathay Park, as seen forty years ago, and his suggestions for its improvement; premising that such suggestions have been more than accomplished since it became the property of the Redmayne family, though, as already hinted at, his animadversions still apply strongly to many other "parks with oak and chesnut shady."

"Few places," says Green, "possess more capabilities than "Brathay Hall, but for a long time no advantage has been "taken of them; many delightful openings might be made "to the lake and the Langdale mountains; and beautiful "walks through groves to the Pull and Pull Wyke on the "margin of the lake. Between the hall and the wyke there "are some rocky knolls that for the pleasures of prospect "may challenge any others round the lake of Windermere; "but all this district is pervaded by a hurtful redundancy of "trees, whereby their growth is impeded, their beauty bud "nipped, hundreds lost and the whole face of the domain "deformed by the neglect of that management which would "render the grounds, to the eye of taste, of a value double of "what they bear at present."

Immediately south of the fine park of Brathay the lake runs considerably into the land, forming the bay known as Pool Wyke, which has at its northern angle an insular rock called Sea Mew Crag, and, near to its southern, an islet named Green Toft Island.

Skirting Windermere, still more to the southward, are the grounds belonging to The Wray, or Wray Castle, built about twenty-five years ago by Mr. James Dawson, previously an eminent surgeon in Liverpool, who, at a very advanced age, still resides in the noble mansion he has erected. This edifice has been the subject of much remark; some calling it a blunder and some a sham. If so, I should pronounce it a lucky blunder—a successful sham. It is not easy, perhaps not necessary, to fix its special style; I am informed, however, that it is most like the castellated mansion of the fifteenth and sixteenth century, when the castle proper, or fortress, began to be superseded by the mansion not actually fortified but still capable of defence. This class of building came up after the wars of the Roses, and continued through the reigns of the Henries VII and VIII, merging at length into the regular Tudor style. The castles of Hurstmonceaux, Oxborough, Tattersall &c., are well known examples, though in them there is, besides the main building answering to the keep or donjon of the *true* castle, a wall of defence enclosing the habitable portions. One great difference between the castle proper and the castellated mansion is, that the latter has external windows. The true castle has windows only looking into the court-yard. Windsor is said to be the oldest example of a castellated *palace*, not altogether a fortress. It was built so early as 1360. Oxborough dates about 1490, while Thornbury, about 1512, is one of the latest before the revival of the style at the beginning of this century. "The Wray" may be described, therefore, as in the style of the castellated mansions of the Tudor period. Before quitting this estate, which owes so much to Mr. Dawson's taste, I may mention that he has also built and endowed a very pretty little church just within his gate, with an appropriate parsonage near at hand.

The hamlet of High Wray stands on the rising ground

south of the castle. It was there that the man Lancaster, as already related, was, for poisoning his wife and children, hanged at his own door, preparatory to being suspended in chains at the Gibbet Moss near to the town of Hawkshead. Close by is one of those small sheets of water so numerous in the district. This bears the name of Blelham Tarn, and, with the stream that issues from it, divides the quarter of Skelwith from that of Claife.

Still to the south rises the fine, bold, but not high hill called Latterbarrow, which there divides the vales of Esthwaite and Windermere. On the wildest and most lonely part of this height, for it is scarcely a hill, there is an extensive slate or flag quarry, long disused and overgrown with wood, some of which is of considerable age. This desolate spot bears the singular name, singular as applied to an extinct quarry, of "The Crier of Claife," whereby hangs a legend, the leading particulars of which may be given here, as indicating the character of the current traditions of that locality.

It is said that, more than three hundred years ago, "The "Ferry" on Windermere was haunted by a troublesome night walker, crying in a manner that enforced attention, from the Westmoreland shore, for a boat; the most urgent and most awful appeals always coming on the most stormy nights. One of the ferrymen who attended to this weirdly hail when first heard, and rowed across the lake against a fierce gale from the southeast, returned with an empty boat, horror-stricken and dumb, continuing speechless for some days and then dying. Travellers began to avoid the ferry, for the crier continued to haunt the knab every stormy night; and "over "all there hung a cloud of fear," so that few cared to venture near it even by day, and to the well-accustomed hostelry might at length be applied the often-quoted words—

"A merry place, 'twas said, in days of yore,
"But something ail'd it now—the place was cursed."

It thus became desirable that something should be done to abate this fearful nuisance, and naturally the monks of Furness were appealed to for aid. These holy men commissioned a brother of noted sanctity and skill to exorcise and lay the apparition, who had come to be known throughout the country by the title of "The Crier of Claife." He soon accomplished the object of his mission and succeeded in shutting up the crier in the desolate quarry, which has ever since borne the same name: a dreary spot, worthy of its story. None of the country people will go near it after nightfall and few care to approach it even in daylight. Desperate men, driven from their homes by domestic discord, have been seen to be going in its direction and never known to return. It is said that the crier is allowed to emerge occasionally from his lonely prison, and is still heard on very stormy nights sending his wild entreaty for a boat, howling across Windermere. I am qualified to speak to this, for I have heard him myself; or at least I have heard what I was solemnly assured by an old lady at Cunsey must have been the Crier of Claife. Riding down the woods a little south of the Ferry, on a wild January evening, I was strongly impressed by a sound made by the wind as, after gathering behind the hill called Gummershow for short periods of comparative calm, it came rushing up and across the lake with a sound startlingly suggestive of the cry of a human being in extremity, wailing for succour. This sound lasted till the squall it always preceded struck the western shore, when it was lost in the louder rush of the wind through the leafless woods. I am induced to relate this by the belief I entertain that the phenomenon described thus briefly and imperfectly, may account for much of the legend, and that the origin of many similar traditional superstitions may be found in something equally simple.

The parish boundary, still holding to the lake side, passes the pretty old house of Belgrange, a sort of jointure house

of the Curwen family, whose property extends here for several miles along the western shore of Windermere. This romantic estate is still finely wooded, though much valuable timber has been sold off it. Many years ago Mr. John Christian Curwen, the celebrated agriculturist and member for Carlisle and for Cumberland, was instrumental, I have been told, in inducing Parliament to offer a premium to the most extensive planter of larch timber, and gained it himself. He had, not long before, bought up a vast extent of the common land of Hawkshead, then recently enclosed, and covered the most of it with young larch. It was thought, at that period, that larch might supersede oak for shipbuilding and other such purposes, and on that account it was held to be a matter of national importance to encourage its cultivation—its growth being much more rapid than that of the oak. I am informed by Mr. Ainslie of Grizedale Hall, who has planted, on his estate in the parish I am describing, 1200 acres of high land with one million and a half of young larches, that the timber in question, though surpassed by oak in density, strength and durability, is superior to foreign pines in being freer from knots, more lasting, less liable to shrink, not cracking under any reasonable degree of heat, and in being more tough, splitting with great difficulty. Mr. Ainslie also remarks—"an opinion prevails that the great numbers of this and other "resin-yielding trees, growing amongst our hills, impart a "balsamic property to the water and impregnate the air with "a healthful resinous fragrance, which cause the district to "offer an exception to the usual unhealthiness of swampy "soils." I am not prepared either to support or controvert this opinion, further than to observe that the district, though subject to frequent and heavy rains, is not generally swampy, and that where it is so it is not exceptionally healthy.

Returning to our boundary line. It continues to follow the lake side and, passing the rocks called Slape Scar, soon

comes abreast of the group of islands which form one of the chief beauties of this, the Queen of our English lakes. The largest of these islands is called Belleisle (a modern and exotic name) and possesses some historic interest as having stood a siege of six weeks by the Parliamentarian General, Briggs, during the last great civil war. It was held against Briggs by Major Phillipson, until relieved by his elder brother, Colonel Phillipson of Calgarth, whose old family seat stands upon the opposite side of the lake. Both these brothers held commissions in the royal army, and like most of the gentry who adhered faithfully to that cause suffered severely for their loyalty. The younger brother, Major Phillipson, was known by the sobriquet of "Robin the devil;" and the well-known incident which followed the siege, his riding fully armed through Kendal Church during service, in search of his enemy Briggs, has been appropriated by Sir Walter Scott in his poem of Rokeby—in the notes to which, and in the local histories, the story may be found in detail.

The island is greatly beautified by its timber and rather disfigured by the building upon it. Professor Wilson has, somewhat audaciously, apostrophized this unsightly edifice as "a Grecian temple rising from the wave." A less poetical observer might think it more like a potter's kiln with the rather incompatible adjunct of a lofty portico; indeed one such has recorded his opinion of it in this epigram—

> "Write but Souchong in letters neat
> You'll have the tea-caddy complete."

This insular residence was long reserved by the Curwen family as a summer retreat; but for many years now it has been unoccupied or let to some occasional tenant.

On the mainland, and fronting this fair island, lies the equally beautiful old farm of Harrowslack, where, in the early years of this century, Mr. Christian Curwen held annual sheep-shearings, at which prizes were competed for, and which,

though not of world-wide fame like his great agricultural gatherings at Workington, possessed a pretty extensive home celebrity.

A small "knab" or point, jutting into the lake just below Belleisle, bears the rather opposite designation of "Coat-lap "point;" I suppose, from some fancied resemblance to the skirt of a man's outer garment. Names of this homely and anti-poetic character are common in the romantic district around, and visitors who converse with the country people on their farms or other local subjects are sometimes amused and sometimes a little shocked to hear applied to fields and other places names remarkably at variance with the surrounding scenery. Thus, an honest farmer in Cartmel-fell, a little-visited chapelry, lying east of the lower part of Windermere, describing the exploits of a runaway cow, said that she leapt "out of my Strip into Jacob's Breeches—out of Jacob's "Breeches into Jacob's Longlands—out of Jacob's Longlands "into Jacob's Big Meadow—and out of Jacob's Big Meadow "into Robert Greenwood's Fiddle-case." These ridiculous names have been originally suggested by the form of the several enclosures bearing them.

Harrowslack-wood, in my estimation the finest shore feature of Windermere, covering a steep hill side, overhangs the deep murky bay which renders peninsular the land occupied by the buildings and grounds of the Ferry Hotel. "The "Ferry on Windermere" is a very ancient institution, often referred to in old charters and other documents, and has been the scene of many sad casualties. The most memorable of these was first brought to my knowledge thus: I happened to be at the Ferry in the autumn of 1845, and heard the then landlord, Benjamin Bills, rebuking some young people for rocking a boat in which they were rowing. Turning to me he remarked, "It was just two hundred and ten years yester-"day since the ferry-boat was sunk by this kind of foolery,

" and forty-seven persons drowned." A dilapidated volume of the MS works of Thomas Hoggart, the Bard of Troutbeck, exhibited at a meeting of this society some years ago, and now in the possession of Mr. William Jackson of Saint Bees, contains a rather tame and poor epitaph on the sufferers by this still-remembered catastrophe, headed thus—" Upon " the 19th day of October, 1635, the Great Boat upon Win- " dermeer Water sunck about Sun Setting, when was drowned " fforty-seaven persons and eleaven horses;

" ffrom Suden Death Libera Nos."

Tradition says that the people who so perished were a wedding party crossing from Hawkshead into Westmoreland. My courteous correspondent, Mr. Alderman Fisher of Kendal, recently found a record of the accident, with the names of those drowned, in the parish register of Grasmere. How it came to be recorded there rather than in the Church register of Windermere, in which parish the accident occurred, is not known.

On a small plateau in the wooded slope, a little south of the Ferry, is a building known as " The Station," where a fanciful attempt has been made to give a variety of effect to the glorious landscape seen from its windows, by glazing each with a differently tinted glass; a " wasteful and ridiculous " excess," like painting the lily or adding another hue to the rainbow.

The Kendal and Hawkshead road follows the shore for about half a mile, then turns westward, rises a steep ascent and, passing between the two ancient farms of Satterhow and The Briars, and below the finely-placed house lately built by Mr. Sowler, Q.C., soon reaches one of the two villages called Sawrey—Sawrey Extra and Sawrey Infra—" Near Sawrey " and Far Sawrey"—or, according to the relative direction in which the speaker may reside—" This Sawrey and The Other " Sawrey." Of this village of Sawrey Extra, Christopher

North, with better warrant than when eulogizing Mr. Curwen's house, says—"There is something chaotic about *Sawra;* "scarcely a village indeed, but rocks, glades and coppices be- "dropt with dwellings." Hardly any description, however laboured, could give such a happily correct idea of the place described as these few words give of the village they depict. A small white building, distinguished by a tiny belfry, stands upon one of the rocks in Sawrey Extra. That is the village School—licensed also for the celebration of divine service. The history of this little school is very characteristic of the lake country; I therefore give it here, using nearly the words of a communication respecting it, made to a local newspaper in 1853.

William Braithwaite of the Fould saw the need for a regular school at Sawrey; so in 1775 he built a school-house, and in the following year gave £300 towards its endowment. Its first master was a Mr. Elleray, who, though taken from the plough, qualified himself in five or six years for the priesthood, obtained ordination, and removed to Winster, where he farmed for six days of the week, and devoted the seventh to the spiritual culture of his rustic flock. Two or three unnoted teachers after him occupied the school in as many years, and then succeeded a Mr. Head, who long enjoyed the reputation of a good master, beloved by his scholars. This otherwise worthy man had a failing, however, which gradually destroyed his usefulness, and caused his retirement. During his incumbency, in 1795, Thomas Braithwaite left by will £40 for the benefit of the master, and £25, the interest of which was to be spent yearly in books to be used in the school. The next master was Philip Braithwaite. He was born in London of poor parents, who died when he was young. An uncle, a blacksmith at Sawrey, took charge of him till he was twelve years old, when he was apprenticed to a farmer; and little more is known of his history till he was appointed

to the school, his recommendations to the charge being that he was a sober young man, and had not been thirteen weeks to school in his life. He was, however, intelligent and attentive to his duties, winning the regard of his pupils, while his simple-minded integrity gained him the respect of the villagers. Soon after his appointment he began to read prayers and homilies in the school every Sunday afternoon, and established a choir, which diffused a taste for music throughout the villages. After performing these self-imposed and official duties upwards of thirty years, Mr. Braithwaite was removed to make room for a younger and more educated master. Before his death he gave £300 to the school, which has declined from the time of his dismissal; for during his mastership, the average number of scholars was about forty; in 1853 it had dwindled to thirteen. In 1827 Miss Ann Braithwaite of Satterhow left £100 for the benefit of the master. It is curious that all the benefactors of this humble institution bore the name of Braithwaite, and were none of them related to each other. This is to some extent accounted for by what we find in *West*, namely, that "At Sawrey Infra, "at the view of the frank-pledge, 38 Hen. VIII there were "George Braithwaite, Bailiff, and eighteen tenants of the "same name."

The sister village, Sawrey Infra, lies upon and amongst the knolls that rise near to the foot of Esthwaite Water, about two miles from Windermere. It partakes, though in a minor degree, of the "chaotic" character of "the other Sawrey;" and the views from some of its handsome residences are surpassingly beautiful, including as they do a noble background formed by the Coniston, Langdale and Borrowdale mountains, with a middle distance declining through an irregular series of broken ridges, possessing all the varieties of colour conferred by different kinds of ground and vegetation, and terminating in the bright verdure that clothes the

charming little vale of Esthwaite, which forms a foreground quiet, but lively and cheerful, the white church and dwellings of Hawkshead gleaming beyond the sparkling waters of the lake, and adding to the natural beauty around the gladdening element of human interest.

On the opposite side of the valley from Sawrey stands Esthwaite Hall, the birthplace of Archbishop Sandys, whose benefactions to this his native district have already been noticed. All that remains of this ancient hall, long the principal residence of the head of the honourable family of Sandys, is now used as farm offices, the mean-looking house in which the farmer resides being of a much more recent date. Though it has always been in the hands of collateral descendants of the archbishop, I have never heard of any steps being taken to prevent this desecration of the old hall; and it now shews few if any signs of its former grandeur. Of the great man born there, it may be briefly noted that he was the third son of William Sandys of Esthwaite, and was educated, as is surmised, at Furness Abbey and at St. John's College, Cambridge. He was advancing rapidly in Church preferment during the reign of Edward the Sixth—incurred the enmity of Queen Mary by advocating the claims of Lady Jane Grey, and after a short imprisonment, sought refuge on the Continent. During the reign of Elizabeth he was made successively Bishop of Worcester and London and Archbishop of York. In 1559 he was one of the Protestant divines appointed to hold a disputation with an equal number of the Popish clergy before the Houses of Parliament. In 1565 he was selected to take part in making the new translation of the Bible. He was also one of the Commissioners for preparing the Liturgy; and in short was much employed in all matters connected with the Reformation, and the permanent establishment of our National Church. He died at Southwell in 1588, his sixty-ninth year. His eldest son, Samuel,

founded the house afterwards represented by Lord Sandys of Ombersley. His second, Edwin, after resigning certain Church preferments, was knighted, and much employed in state affairs by James the First. Myles, his third son, was created a baronet by the same monarch; and his youngest son, George, also a knight, was celebrated as a poet and traveller, and published a volume, entitled "A *Relation* of a "journey began An. Dom. 1610. Foure Bookes, containing "a description of the Turkish Empire, of Ægypt, of the "Holyland, of the Remote parts of Italy, and Ilands "adioining." This work seems to have been received with favour by the reading public of its day; for the copy I possess is one of the fourth edition, published in 1637. It shews great scholarship and powers of observation and description, and is profusely illustrated with very grotesque engravings.

Further up the lake of Esthwaite, and on the same side as the old hall, stands the handsome mansion called Esthwaite Lodge, the seat of the late Mr. Beck, the learned author of that splendid antiquarian work, *Annales Furnesienses*. This house is now occupied by Miss Aglionby, the representative of an ancient Cumberland family, who boast that their patronymic includes in its syllables, the King of birds, the King of beasts and the King of insects, the Eagle, the Lion and the Bee.

On the eastern side of the valley, adjoining the village of Colthouse, is the Quaker's meeting house, plain and peaceful-looking, like the worthy people who assemble there. It must be one of the earliest places of worship erected by the Society of Friends—an extract from the parish register, given in a former paper, shewing that the first interment in the burial ground connected with it was made in 1658. The only interesting fact that I have been able to recover, bearing reference to this humble edifice, is that some Friend settled an endowment of £10 upon it for the purpose of providing

hay for the horses of those worshippers who come from a distance. This meeting house is still well attended, and by a very respectable congregation.

Again quitting the interior of the parish we find that its boundary line, along Windermere, passes the sequestered and scattered village of Cunsey, which is supported mainly by its bobbin mill. The manufacture of those small cotton reels is a form of industrial occupation almost peculiar to the lake country; and for a very agreeable and amusing account of this branch of local industry, I would refer you to an interesting article in the 88th number of *Household Words*, called "The Bobbin Mill at Ambleside." The localisation of this manufacture is due to the great extent of ground under natural coppice wood. Some of the best known, most extensive, and most valuable of these woods cover the heights that rise to the westward of the village of Cunsey. They are tolerably profitable to the proprietors, the growth being sold about every fourteen years, and fetching an average of £25 an acre, which is about equal to the rental of the best farm lands. They afford employment to a great number of wood cutters, bark peelers, charcoal burners, hoop makers, "swill" (coarse basket) manufacturers, and, perhaps in greater numbers than all the rest, bobbin turners. In the neighbourhood of Cunsey, and in some other parts of High Furness, indications of another species of industry, suppressed there by royal edict some three centuries ago, are apparent in the large quantities of scoriæ or slag, scattered about, and occasionally utilized as a material for fence walls. These slag heaps shew where the ancient smelting works, called Blomaries and Bloom smithies were in operation until the 7th of Queen Elizabeth, when the tenants in High Furness petitioned Her Majesty to extinguish the bloomaries, on the ground that so much of the small wood was used to make charcoal for smelting iron, that their cattle were in danger of being deprived of their winter

food, which consisted chiefly of the tops and croppings of the said wood. The tenants carried their point by agreeing to charge their estates with the annual rent previously paid to the Crown by the workers of the bloom smithies.

The stream named Cunsey-Beck, which runs into Windermere near to this village, separates the division of Claife from that called Satterthwaite. Before taking leave of the former, I may mention the singular fact, that its population in 1861 was exactly the same in number as when the census was taken ten years before, namely 540. The proportions of the sexes, however, differed materially at the two periods; for in 1851, the males numbered 286 and the females 254, while in 1861, the males were only 261 to 279 females, an inversion of the relative numbers of the sexes that I think has not been accounted for.

After a course along the western margin of Windermere of more than ten miles, the Hawkshead boundary line turns abruptly off to the westward, at a point where a little stream flows into the lake just below Graythwaite, the beautiful seat of the late Mr. John Job Rawlinson, the well known commissioner of tithes. Families of this name were formerly numerous in Furness, though the Rawlinsons of Graythwaite are now the only landed gentry of the name remaining there. The last representative of one of these families, Christopher Rawlinson of Cark Hall in Cartmel, was a great Saxon scholar in his time, and "made a foundation (at Oxford) for "the support of a lesson in the said language for ever." The same gentleman claimed, through his mother, daughter of Robert Monk, Bishop of Hereford, and niece of the more celebrated General George Monk, Duke of Albemarle, to be the last descendant, in the male line, of the royal house of Plantagenet.

Not far from Graythwaite, sometimes for distinction called *Low* Graythwaite, is Graythwaite Hall, the seat of the main

line of the Sandys family, in favour of which they abandoned and, as has been shewn, neglected the old hall of Esthwaite, when the Graythwaite and Esthwaite branches, which had been distinct for six generations, were re-united by the marriage of the son and heir of the latter with the daughter and heiress of the former. In the east front of Graythwaite Hall is a stone bearing arms and the figures 1173, which some say was brought from the older buildings of Esthwaite Hall, and others that it indicates the age of that part of the very handsome mansion of whose wall it now forms a part. If so, it could not be put there by the Sandyses, who did not come into Furness until more than two centuries later; for it is certain that in the time of Richard the Second, they were located at Saint Bees, and served as Knights of the Shire for Cumberland in several parliaments during that monarch's unfortunate reign. However that may be, there can be no doubt but the present Mr. Sandys of Graythwaite Hall offers one of the many instances of the best blood being found amongst the untitled gentry, in representing one of the most ancient and honourable lines in the kingdom, members of the junior branches of which have achieved high dignities in both Church and State-Peerages, Baronetcies and Knighthoods. At Graythwaite Hall is preserved one of those curious relics of ancient conviviality called Peg tankards, from having a row of pegs or knobs down the inside to regulate the draughts of the different topers when the tankard was passed round from one to another. A specimen of these vessels in silver is preserved in Mr. Mayer's collection, and a drawing of one made of wood, and saved from Glastonbury Abbey, is given in Hone's *Year Book*.

The boundary line now follows a very devious course over bleak heights, which separate Graythwaite from Dale Park, a narrow secluded valley about a mile in length, containing some three or four small farms. It then passes on to the

romantically situated village called Force Forge, from the fine rocky waterfalls or "forces" near to it, and two ancient forges where iron was formerly smelted. These have long been blown out, and their places occupied by bobbin mills, employing about forty hands.

A mile to the northward of Force Forge lies one of the numerous lake country villages, which preserve, in the Scandinavian construction of their names proof of the early settlement by the hardy and enterprising Northmen of most of the valleys in the district. The name of this village of Satterthwaite, too, having been extended to the largest division of the parish, would seem to indicate great antiquity and former importance. The church there, a chapel-of-ease under Hawkshead, was first erected shortly after the Reformation, the present building being more modern. The register only dates from 1766. Previous to that time all baptisms &c. were performed at the mother church. Since then, the living has been held by seven incumbents, its present minister, the Rev. Haygarth Baines, having been inducted in 1833. To that gentleman, an old and valued friend, I am indebted for some interesting particulars relating to his retired and peaceful chapelry. The stipend amounts to £130 per annum, arising from the rentals of three farms and an award of £30 from the Ecclesiastical Commissioners, its value having doubled in the last thirty-three years. The population has, however, decreased during that period from 500 to about 400. The people live to good ages, some going beyond ninety, and many passing eighty. They are honest and industrious in their habits; "and," says Mr. Baines, with justifiable pride, "they are now very much improved in manners and mode of "speaking—so it should be, for we have had a good school "under certificated masters above fifteen years, in fact for about "six years our school was, I believe, the best country school "in England; so said two of the government inspectors."

This handsomely built school, with its comfortable dwelling-house attached, stands a little below Satterthwaite, and was established mainly by the munificence of Mr. Ainslie of Grizedale Hall, a life-member of this Society, whose beautiful estate, village and mansion are situated farther up the same rarely visited dale, the first extending on either side far over the parallel ranges of heights, and the two latter occupying a most delightful situation in the bosom of the valley between the said heights.

The Hawkshead boundary now passes over the wild bare moor of Satterthwaite—the adjacent moor of Grizedale, a few years ago equally wild and bare, being now covered or sheltered by Mr. Ainslie's thriving and extensive plantations. It (the boundary) then runs between two lonely, desolate-looking farms, called Lawson Park and Park-a-Moor. These old farms are called in the schedule of the possessions of the wealthy Abbey of Furness, as given in West's *Antiquities*, "Granges in Furness Fells," and are there valued at £1 10s. each per annum. Previous to the invention of lucifer matches, and probably for long after, the fires on the stone hearths of these two "Granges" had not been extinguished, it was said, for many centuries, probably not even yet. Their fuel being peat, was easily kept smouldering throughout the longest night; while their distance from neighbours, and the consequent difficulty of procuring means of re-lighting their fires if extinguished, made their many generations of inmates careful to preserve them alight.

The boundary of the parish I am attempting to describe now descends by rough, steep pasture lands and bristling coppice woods to the fair lake of Coniston, in the central line of which the parish of Hawkshead has its south-western angle. In compiling this paper I have, with one or two unavoidable exceptions, abstained from noticing anything outside of the line I have followed so closely; but it would

be difficult, and for many reasons inexpedient, to separate, even in description, Monk Coniston, which forms part of Hawkshead, from Church Coniston, which is a chapelry under Ulverston, but both lying in one lovely vale. I shall, therefore, include the remaining portion of Hawkshead parish in the next paper of this series, which will be devoted to the two Conistons.

NUMISMATIC HISTORY OF ENGLAND, FROM 1066 TO THE PRESENT TIME.

PART II.*—1504 TO PRESENT TIME.

By F. J. Jeffery Esq., F.G.H.S.

(Read 15th March, 1866.)

In the former paper on this subject we took a rapid glance at the origin and progress of the art of coining from its first invention, and, observing some of the more important coins issued between 1066 and 1504, we closed with the latter date—the end of the first section—and we found the "sovereign" just introduced, having been ordered to be coined and declared current in the year 1489.

We therefore now enter upon section

II.—The Gothic, or more properly the Tudor, 1504—1656.

This division is termed Gothic from the introduction, by Henry VII, of the arched crown in a Gothic style, the lettering of the legends being also in somewhat similar type: and it is termed "Tudor" because the type and style were introduced by Henry VII, who was the first King of the house which bore that name. It is distinguished from the *Rude* by the settled introduction (with a very few exceptions) of the profiled or side-faced portrait of the monarch on the coins other than gold, while the Rude has nearly all full-faced: and it is distinct from the Simonian in the style of engraving the portrait; for while the Gothic character of the letters of the legend soon gives place to the Roman, still we find the Gothic crown throughout, which disappears when the Simonian is coined, and the latter introduces a bolder and more decisive portrait than we find on the Gothic.

* *Vide* "Transactions," vol. V, N.S., p. 187.

In the previous paper we noticed how the penny, of twelve pennies to one shilling, was first introduced by William the Conqueror; but though this coin was declared to be current at the value of French pennies, viz., twelve to a shilling, yet the latter had never been struck but merely a money of value, we now find that money issued for the first time as a coin. This took place in 1504; which year is remarkable for the change of the type of the silver coinage. (Part I, plate I, fig. 2.)

"His portrait was then given on them in profile, with a "crown of one arch only, * * a form in which it had not "appeared upon the coins since the reign of King Stephen. "A single beaded line likewise took place of the double tres- "sure upon the obverse of the groats and half-groats; the "inner circle of the reverse, which contained the name of the "mint, omitted; and the rude pellets, which had so long "occupied the quarters of the cross, were superseded by a "device scarcely less barbarous, an escutcheon of the royal "arms surmounted by the cross.

"On some of these coins he added to his name either Septi- "mus or the Roman numerals VII, a practice which had been "disused ever since the reign of King Henry III, on whose "coins alone, of all our monarchs from the earliest times, "numerals, or any other distinction of the kind, had appeared. "The omission of such upon the coins of the first three "Edwards, and also of the IV, V and VI Henries, has occa- "sioned difficulties almost insuperable in the appropriation of "their respective coins to those monarchs." (Ruding vol. i, 299.) This adoption of numerals now became general.

Henry VII was succeeded by his second son Henry VIII, who came to the possession of his father's throne and wealth in 1509. His first coinage was struck with his father's dies, with the alteration of VII to VIII.

He issued leaden tokens to supply the want of silver in the early part of his reign.

FIG. 1.

HENRY VIII.

TO COMMEMORATE DIGNITIES.

FIG. 2.

EDWARD VI.

CROWN-PIECE.

FIG. 3.

CHARLES II.

PETITION CROWN.

FIG. 4.

VICTORIA.

GOTHIC CROWN.

D. MARPLES, LITH.

1522. It was declared that, whereas the crown of the sun was not an aliquot part of a sovereign, another crown—a crown of the double rose—be struck, of the value of five shillings and its half for two shillings and sixpence, which new coins were more easy to reckon. This is worthy of note, as being the introduction of our crown and half-crown—though of gold—to be issued in silver in the following reign.

In 1540 Henry VIII changed his title of Lord to King of Ireland for himself, his heirs and successors, Kings of England; and in 1543 he declared himself supreme head of the Church in England and Ireland, and it was declared high treason to attempt to deprive his "Highness" of these titles by any means whatsoever.

There was a piece struck which some people consider a silver crown (pl. I, fig. 1,) but there is no mention of such a coin in the indentures; which accounts for some authorities being of opinion that it is more likely a medal, to commemorate his new dignities, for it bears the following inscription on the obverse—"HENRIC: 8. DEI. GRACIA: ANGLIE: "FRANCI: Z. HIBERN: REX:" and on the reverse—"ANGLICE "Z. HIBERNICE: ECCLESIE: SVPREMVM: CAPVT." which does not occur on any "others" of his coinage.

Henry's base coins were issued when he had exhausted his father's wealth and adulterated the silver. These coins bear the full and three-quarter face, and after a little wear the nose of his Highness's effigy became copper-colour, which gave the slang name of "copper nose" to this currency.

Though this paper is not intended to treat on other coins than English, it will be of interest to observe a few of the changes on the Irish issues as we proceed. This reign is remarkable for the first issue of the harp on those coins.

Edward VI succeeded his father in 1547. The testoons were now recalled because they were copied and forged to a great extent, and in the same year as his accession to the

throne the shilling and half shilling, under these names, were issued, the young monarch having at once seen the dilapidated state of the coinage.

1551. 24th September.—The King made a note in his diary that he had sanctioned the issue of the five shilling piece (plate I, fig. 2) and its half of silver. I think this will go far to prove that the piece, above referred to, struck by Henry VIII, was only a medal ; and as this was the first issue of a silver crown, the King thought so much of the new coin as to deem the fact worthy of a place in his journal.

This reign is noteworthy for a valuable improvement in numismatics. Up to this time the student has no date to guide him in arranging his collection ; he is now for the first time aided by the year of issue being stamped on the coin.

Edward VI issued testoons (shillings) with M. D. XL7. on the obverse in the legend, and on another M.D.XLIX. These dates are in Roman numerals, and if we refer to the silver crown we find the date impressed in Arabic figures in the field under the belly of the horse on the obverse.

Edward was succeeded by his sister Mary, and one of her first acts was to declare the sovereign current at thirty shillings, and the half-sovereign (to be called the royal of gold,) at fifteen shillings.

The following year the Queen married, and the profiles of herself and her husband Philip appear in the unusual position of vis-à-vis on their coins (plate II, fig. 1), or on the opposite sides of the coins, and after the marriage the arms of England and Spain are blended.

This short reign of five years was followed by that of "Good Queen Bess," and she declared the sovereign to be current for thirty shillings and the other pieces in proportion, the same value as declared by her deceased sister.

Great pressure was brought to bear to induce Queen Eliza-

beth to sanction the coinage of copper money—farthings and half-pence—for people were so short of small change that pewter and leaden tokens had been issued; but this metal was declared to be too poor for England, and she could only be induced to sanction them for Ireland. This was the first attempt to introduce copper into the English currency.

1561. The "threepenny bit" was first ordered to be struck.

Among the most important and most interesting facts connected with our coinage and currency, is a highly beneficial and marked change in the mintage which took place in this reign. I refer to the introduction of the mill and screw into our mint in this year (1561). This machine was introduced by a Frenchman named Philip Mastrelle, who was taken into the mint to work the new press; but being discovered forging when away from work, he was executed at Tyburn as a traitor.

This year a proclamation was issued, altering the currency of the coins—the sovereign being declared henceforth not to pass for thirty shillings but twenty shillings, and others in proportion. This refers to all coins of fine gold. Those struck in crown gold—the sovereign, current at twenty shillings, to pass for thirteen shillings and fourpence, and others in proportion.

James VI of Scotland succeeded Elizabeth as James I of England, thus uniting the two crowns, and before his arrival in London he had issued a proclamation declaring that the coins of Scotland should pass current in England, the six pound piece at ten shillings and the mark at thirteenpence-halfpenny. On the English coins "Scotland" was put after "England" in his dignities, and the Scottish as well as the Irish arms were quartered on the moneys for the first time.

Though he had styled himself King of England, Scotland, France and Ireland on his first accepting the crown, James,

in the following year, 1604, altered this designation to King of Great Britain, France and Ireland, and ordered such henceforth to be struck on his coins.

The same year he declared that, as the English gold coins were not in relative value to the silver, equal to the proportions attached to them out of the country, which had been the cause of the exportations of such gold, a new coinage should be issued, wherein the twenty-shilling gold piece, called a sovereign, was designated "unit."

1611. The exportation of gold was carried on to such an extent, that in this year the "unit" was raised from twenty shillings to twenty-two shillings in value, and other gold coins in proportion. The old sovereign or rose-royal to be current at thirty-three shillings instead of thirty shillings, and the remainder of the coins struck of angel (or fine) gold in proportion; the unit &c. being struck of crown gold.

In 1619 the weights were altered so as to bring the coins to their former denomination, viz., thirty shillings, twenty shillings &c. pieces; we thus get the unit again at twenty shillings. This piece of the new weight was remarkable for being the first English coin to bear the King's profile laureated, whence they were termed in slang, "laurels."

The ambition for centuries of the English Kings, the cause (whether secret or open) of nearly all the bloodshed between the northern and southern monarchies of the island—the unceasing desire of Edward I, who had annexed Wales—the union of England and Scotland under one crown, was recorded by James I on most of his coins. On the unit we read "*Faciam eos in gentem unam.*" On the double crown (half sovereign) "*Henricus rosas, regna Jacobus,*" alluding to the roses being united by Henry VII and the thrones by James I. The thistle crown bore "*Tueatur unita Deus.*" On the four larger silver coins, "*Quæ Deus conjuxit nemo separet.*"

We now come to the unhappy monarch Charles I—filled with false notions, with absurd ideas, in his youth, about that now exploded idea of divine right, which cost him first his crown and then his head.

Within three months of his accession he granted letters patent to the Dowager Duchess of Richmond and Sir Francis Crane to issue copper farthing tokens of the same type and style as those of the late King—to weigh about six grains each.

1640. The struggle had commenced between Charles and his Parliament, and to supply his wants the first thing he did was to seize the metal in the mint: he afterwards gave securities for the repayment of the same. He had recourse also to other measures for raising money, and at length resorted to the common practice of debasing the coinage; but this his advisers could not suffer—though they stood faithful to their Sovereign in his troubles, they could not approve of such a means to help him out of his difficulties. Charles knew his men must be clad and fed, and to clothe and feed them he must have money.

A bill was brought into Parliament—the Scotch objected to the currency being tampered with, and were met by the reply, "it is the King's prerogative." Various proposals were made, and the King set the example of melting down his own plate. The dispute between his Majesty and his Parliament had by this time come to a rupture, and now we find ourselves with that most interesting series of currency, the "siege-pieces," a series which alone would supply sufficient material for a paper. The set shows the progress of Charles, marking, by the impressions they bear, the different towns he stopped at during his war with his Parliament. They were formed of pieces of plate, supplied by his adherents, rudely cut and stamped with the value as II. VI. (for 2s. 6d.) and either the name of the town in full or a sketch of its castle, while some bear the weight instead of the value.

(Plate II, fig. 2.) The coined money, again, got clipped or hoarded up "for better times;" to such an extent, indeed, had the clipping gone, that a crown piece looked more like a half-crown, notwithstanding that the mill and screw had been worked under the direction of Briott, a Frenchman, to ensure a better security against this evil practice.

While Charles was issuing these "bits of metal, stamped "with the value," the Parliament was not standing still. Though the King had secretly ordered the staff of the mint to follow him so soon as they had gathered a quantity of plate together, which was rapidly being brought in by his friends to be worked into that which was most needed, his opponents got information of this, and issued a counter order to the effect that no one was to leave the Tower without an order from the House.

It does not appear that the Parliament issued any coins during the King's lifetime, except those bearing his Majesty's effigy; but after his death those known as the Commonwealth coins were struck. This currency stands alone in style. It is the first money bearing the legends in English, and instead of the Royal arms we find the cross of St. George and the harp of Ireland on shields in the centre. (Plate II, fig. 3.) This change or rather innovation on the usual Latin inscription and heraldic symbols of royalty was only effected by a change in the Master of the Mint;—Sir Robert Harley, who had held that post under Charles, declined to execute dies of such barbarity as bearing English legends—so he made way for one not quite so fastidious, in the person of Dr. Aaron Guerdain.

We now find the coinage fairly under the power of the Commonwealth, and one of their first acts after the execution of Charles, was to discuss the mintage. Besides the heraldic emblems being altered, as just alluded to, the English legends were substituted for the Latin, and were, on one side, *The Commonwealth of England,* and on the other, *God with us:*

and Thomas Simon (or Symon), that master of the art of engraving, "was appointed to be sole chief engraver to the "mints and seals."

1649 and 1651. Copper was again projected as a proper metal to issue in small coins for the poorer classes, but does not seem to have been used.

When the excitement consequent upon the wars and tumults just over, had subsided, Cromwell turned his attention to the currency. He had in the mint one of the greatest engravers, if not the greatest, of the period; but there was a contemporary in France, named Pierre Blondeau, who had worked up the currency of that country, by his skill as engraver, aided by the mill and screw, with his own latest improvements added, to a state of perfection. He was invited over; but unfortunately, as with all improvements—the workman of any particular branch objects to any innovation upon his "jog-trot" pace and style of work—the men at the mint stoutly resisted any alteration, and though Blondeau made pattern pieces to shew an improvement, with inscriptions on the edge for the first time, the resistance was too great, so his designs were never issued, and he went back to France.

1653. Oliver Cromwell was declared Lord Protector of the Commonwealth of England, Scotland and Ireland; and in 1656 he ventured to issue coins bearing his effigy and legend, (part I, plate I, fig. 3), the designs of which were by Thomas Simon, and are the first of section

III.—The Simonian (1656 to the present time).

This issue is worthy of examination.

I. While Cromwell ventured, thereby, to issue a coinage with his own profile &c. on, Simon had ventured to use the means adopted by Blondeau,* the mill and screw, to obtain a

* An order in Council declared—"That the stamp and superscription on one "side of the money to be coined according to M. Blondeau's new invention, be "according to the form now brought in, instead of that form agreed on."

correct round and a legend on the edge, though this means was rejected by the workmen when Blondeau himself wished to work it: it may therefore fairly be inferred that they were indignant at a foreigner being brought over to do what they could themselves perform, if they only had the same machine—for in Simon they had the talent for engraving.

II. A crowned profile-bust, clad in the dress of the period, had always been the type adopted for the coins; but here was one who refused the crown, a President of a Republic, a man by whose energy the country had been led successfully through a long strife. Simon availed himself of these points and produced a classic profile-bust, draped and laureated in bold relief, which introduced the style that has been used ever since, for we only find the crowned profile on the early coins of Charles II, when he refused to employ Simon, on account of his working for Cromwell, and wished to have his issue as unlike the Protector's as possible. This and the Gothic crown and florin of the present reign are the only crowned types since issued.

III. This is the date from which starts the changing of the profile from left to right and right to left. Cromwell had his to the left. Charles II's first issue, though different in type, was not looking another way: but in his second issue, laureated and draped, he faces the right, "to turn his back upon the "traitor." James II looked to the left; William and Mary to the right; Anne to the left and so on.

The coins from this date begin to be more of the size in present circulation, and the shillings, instead of having, as previously, a "tinny" sound, have the solid ring.

The Protector died 3rd September, 1658, and his son Richard was declared his successor; but he was not of the same character as his father and resigned soon after. No coins were struck during his brief protectorate, though copper farthings were again projected.

Charles II returned, by general solicitation, to the English throne in 1660.

He had struck and issued coins of the "siege-piece" class after his father's death, and "F. D." (Fidei Defensor,) appears for the first time on the currency; but disappears till George I re-introduced it.

Thomas Simon was ordered to prepare dies with the King's effigy.

In the same year the unit, current at 22s., was declared to pass for 23s. 6d., and other gold coins in proportion.

Soon afterwards the Commonwealth coins were forbidden to be current, and as the Cromwellian issue is not mentioned, Numismatists argue that they could never have been declared current.

1662. Blondeau was again called to the mint, and he undertook to shew his method of working the edges to the men. Simon and a foreigner, John Roetier of Antwerp, whose acquaintance the King had made during his exile, were ordered to make designs. Roetier's were accepted and Simon left the mint, whether chagrined at having his designs supplanted by a foreigner's or removed by order does not appear.

1663. Gold was brought from Guinea by the African Company, and, being sent to the Tower, was issued in pieces value twenty shillings and denominated "guineas." These coins bear an elephant under the profile, to mark that they were made of the above gold.

This year Simon produced his celebrated petition crown, one of which, at a sale about two years ago, brought £260. It is considered a master-piece of engraving, and on the edge has the following petition: —

"Thomas Simon most humbly prays your Majesty to com-
"pare this his tryal piece with the Dutch, and if more truly
"drawn and embossed, more gracefully ordered, and more
"accurately engraved, to relieve him."

This was rejected; and only three specimens of the crown are known now to exist. (Plate I, fig. 3.)

The second issue of his Majesty's coinage appeared in this year. Now for the first time the armorial emblems appear in four different shields on the reverse, with the star of the order of the garter in the middle—which style was maintained till the new general issue in 1817; and again repeated in the Victoria Gothic crown and florin.

The bust was, like Cromwell's, laureated and draped, and, as before mentioned, looking to the left, the reverse to the Protector's and Charles's own first issue.

1665. Patterns of the copper farthing were struck, and in 1672 they were current: from this year we may date the copper currency.

James II succeeded his brother in 1685, and his coinage was the same as his predecessor's; but his laureated profile looks the reverse way—to the right.

1688. He abdicated, and we soon afterwards find him issuing, in Ireland, the peculiar currency styled "Gun-money." This issue is as curious and interesting as the "Siege-pieces." At first when he invaded Ireland, he took with him French coins, declaring at what value they should be current. He afterwards established mints at Dublin and Limerick. Kitchens were ransacked, guns, brass and copper, were melted down, and all issued as money; white and Prince's metal were also used.

Crowns and half-crowns as well as the smaller coins were struck and current, and when James found his funds decreasing he called in his half-crowns, passed them through the press and they came out crowns. These interesting "proofs "of making money" have the half-crown impressions more or less distinctly to be traced amidst the impression of the larger value. Some idea of James's work may be gathered from the fact that £6,500 worth of these metals were struck

and issued to represent nearly £2,200,000, but these figures do not include the sum involved in the calling in of the half-crowns and re-issuing of the same, as above mentioned, as crown pieces.

William III and Mary II were declared King and Queen on the abdication of James II in 1688. The coins were ordered to be struck of the same value and denomination as those of their predecessor.

Clipping had become so bad, notwithstanding the severity of the laws against offenders, that, after numerous discussions, resolutions and petitions, the King mentioned the grievance in his speech at the opening of Parliament in 1689, it having been previously estimated that it would require one million sterling to make up the difference between the intrinsic and current values of the clipped money.

Objections were raised against going into the currency question, as the country was then engaged in a foreign war.* The guinea, which had already risen from 20s. to 23s. 6d., now rose to 30s. But Parliament, finding that this state of things interfered with the currency, causing gold to rise in the market and the exportation of good silver to buy foreign gold, exercised its power, and in 1696 declared the guinea to pass current first for 28s. and afterwards 26s.

The bad state of the coinage was now bringing the currency to a definite point. In December, 1696, hammered money, that is, all money coined before Cromwell's time (when the mill and screw were first used) was declared to be unlawful, and to be received in taxes by weight, at the rate of 5s. 8d. per ounce, and taken to the nearest mint (of which there were several established for the quicker re-coining) before being taken into the Exchequer.

1699. When the new silver coinage, amounting to nearly £6,900,000, which it had occupied nearly three years to produce, was issued, it was calculated that the operation

* War with France.

involved a loss to the country of over £2,700,000, caused by taking in clipped and worn money by tale and re-coining it to weight. The mint charges were not quite £180,000. We may from this year date the disappearance of hammered coins.

During the joint reign of William and Mary their profiles both appear on the coinage, and the legend is "*Gul. et Maria*" &c. Upon Mary's death her portrait disappears, and the legend is "*Gulielmus III*" or "*Tertius.*"

The mints established for the greater rapidity of coining the new issue were at Bristol, Chester, Exeter, Norwich and York, and the money struck at these respective towns bear the initial letter; besides these mint marks, the "Elephant "and Castle" was issued on those coined of the African Co.'s metal, the "Rose" on the silver from the English mines, the "Plumes" on that from the Welsh.

Queen Anne succeeded to the throne on the death of William III in 1702.

Though the late Sovereign's coins were good, they appear meagre when compared with the elegant dies of this Queen. The impression seems as if it is meant to stand the wear and friction of the currency, and is considered by some as the point to divide the history of the coinage into two parts, though the authorities who favour this opinion admit that the impressions do not excel Simon's on the Protector's issue.

The authorities then in power and others, among whom was Dean Swift, appear to have wished to make the coinage something more than mere pieces of metal of a money value. The question was raised whether they could not also be monuments or medals for recording great events. Accordingly, in 1702, war being declared against France and Spain, and the town of Vigo in the latter country having been taken, some of the silver and gold found among the spoil, which, on being brought to this country, was coined, bears "Vigo" on the obverse under the fall of the

FIG. 1

PHILIP & MARY.

SHILLING.

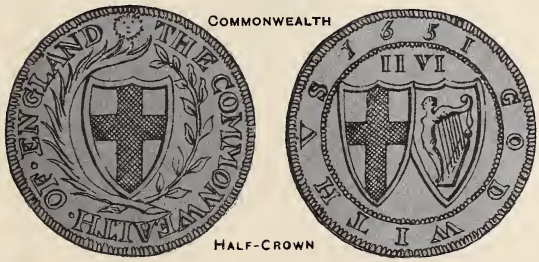
FIG. 2.

SIEGE PIECE

HALF-CROWN.

FIG. 3.

COMMONWEALTH



HALF-CROWN

FIG. 4.

QUEEN ANNE.

"VIGO" SHILLING.

FIG. 5.

GEORGE I.

SHILLING.

neck, thus recording that that city was taken in that year. (Plate II, fig. 4.) This idea, of making the currency medals of record as well as money of commercial value, however, was not further acted on.

Complaints had been repeatedly made about the losses sustained by changing the Scotch currency into English; wherefore, in 1707, coins of English denomination were struck at Edinburgh and bear E under the profile; these were made of the Scottish coins which had been returned to the mint, though some were issued of Scottish value. In 1708, however, these last were called in, and coins of English value only issued, bearing E* under the bust. This was the last gold or silver issue coined away from London.

The silver and gold coins of this reign were so much alike that shillings were gilded and passed off as sovereigns.

No copper coins were issued; pattern farthings exist and bring high prices, though the more plentiful are sometimes erroneously sold as the scarcer.

Her Majesty had rejected a pattern guinea because the shoulder was bare, and she was so modest that all her coins bear her bust draped.

Queen Anne died in 1714 and was succeeded by George I, whose coinage, save a quarter-guinea which was issued for the first time, was the same as his predecessor's. The legend, however, has his German titles added, reading thus—Georgius D. G. M. BR. FR. ET HIB. REX. F. D.—BRVN. ET L. DVX. S. R. I. A. TH. ET EL. Georgius Dei Gratia Magnæ Britanniæ Franciæ et Hiberniæ Rex, Fidei Defensor—Brunsvicensis et Lunenburgensis Dux Sacri Romani Imperii Archi Thesaurarius et Elector.—Duke of Brunswick and Lunenburg and Arch-Treasurer and Elector of the Holy Roman Empire.

Defender of the Faith (F.D.) appears now for the first time on legal coin, though these initials had been used on the Great Seal ever since the title had been conferred on Henry VIII

by Pope Leo X, and appeared as before mentioned on some of the siege-pieces of Charles II. (Plate II, fig. 5.)

George I was succeeded by his son George II in 1727. The currency was the same, excepting that no quarter-guineas were issued.

The mill and screw had been considered an effectual barrier to clipping—and so they were; but thieves will steal, and they had found out a method of filing off the edges, and then re-milling with a file—therefore the milling of this reign was altered from perpendicular to a slant or cable-twist.

1733. The old hammered coins, angels &c., of James I, Charles I and Charles II, which still remained in circulation under the term "broad pieces," were now finally forbidden by enactment.

George III succeeded his grandfather in 1760. The currency remained the same; but by this time the coins of former reigns had become so flat from circulation, that it was difficult to say whether a piece of money shown was English or foreign: there being no rim to protect the impression, the latter bore all the friction and so the marks of the die soon disappeared.

Lord Liverpool in a letter to the King estimated the depreciation on the shilling to have been one-sixth.

1761. Quarter-guineas again coined.

1770. Seven-shilling pieces were among the list to be issued, but this coin does not appear to have been proclaimed current till 1797.

Still the clamour was rife against the inferior currency. Such a difference was there that, as new guineas were issued, they were exchanged or bought up for the defaced and depreciated, till at length the Government took into consideration the best means of preventing this evil. Lord North proposed that all the old coin be recalled, and for the future the gold currency should be regulated by weight as

well as by tale, which was approved of by the King: the idea found a place in his Majesty's speech at the opening of Parliament; a debate ensued; and at length certain weights were allowed for depreciation, below which the gold coin was not to be legal tender.

1786. The sovereignty of the Isle of Man was purchased, and copper coins issued bearing his Majesty's profile.

1784. The Anglesey penny was issued, and was the first of that immense series of tradesmen's copper tokens which were justified by the paucity of the legal copper currency, against which there had been complaints year after year without effect. These tokens form a collection of themselves, and they range from 1784 till the great authorized issue, in 1797, of the copper coinage struck by Bolton of Soho, Birmingham, which currency contained copper penny and twopenny pieces for the first time in our coinage; the twopenny piece being found too cumbersome was never again issued.

But this appearance of tokens did not remedy the condition of the silver and gold coins. The clamour increased—forgeries were detected—the allowance for prosecuting offenders had to be increased—dollar tokens were issued by the Bank of England. People were summoned for refusing the coin of the realm, and riots broke out in different places.

The authorities only replied by issuing new coins in driblets, and debating on the weight and fineness of a new issue—till at length, in 1817, the grand new coinage appeared; and, so that the public might get them fresh untarnished, some of the pieces were given out from the Bank of England in silver paper. This issue contained the "sovereign" at 20s. once more. The guinea, which had given so much trouble and had ranged from 20s. to 30s., had been previously fixed at 21s., and now it with its parts ceased to be struck.

Upon the new coinage being ready, the old was declared to

be taken at its nominal value, by all the branches of the Revenue.

The currency then appearing for the first time is still in circulation and requires no description; but one alteration is worthy of note. The claim to the monarchy of France, which had uninterruptedly been persisted in by the English crown ever since the time of Edward III, so far as the inscription on the coins and Great Seal and quarterings on the armorial bearings were concerned, now disappears from all three; but it is curious that, though the arms of his Majesty's German dominions remain on the quarterings, having been introduced by George I, the initials of his dignities appertaining thereto, introduced at the same time, are now no longer to be found on his English coins; and the engraver's name again appears on the money, not in the old style in a garter on the reverse, but neatly and beautifully engraved on the fall of the neck, below the neck, or on the shield.

1825. During the reign of George IV the Irish and English coins were declared henceforth to pass for the same value in each country.

William IV succeeded his brother George IV, and during the reign of the former (in 1836,) the groat having been discontinued from Charles I's reign till this date, was once more issued, and is still current as a "fourpenny bit."

The points of interest worthy of note during the present reign are the ceasing to coin crowns in 1847 and half-crowns in 1851, though in 1847 W. Wyon executed what is considered to be the most chaste and beautiful design since Simon's celebrated petition crown. It is Gothic, having the Sovereign's bust once more draped in her robes, and on the reverse the royal arms on four shields, with the star of the order of the garter in the centre. (Plate I, fig. 4.) This coin, however, a crown piece, (of which two thousand were struck,) was

condemned, as the public prefer something smaller for the pocket. It was consequently recalled and specimens only exist in collections.

1849. The florin—one-tenth of a pound—was issued of a similar device; but people were scrupulous—it had not the charm of D.G. and it would not sound if rung; so that was followed by one a little larger in circumference, thinner, and bearing the *absolutely necessary* "Dei Gratia." This piece was issued as a first step to decimal coinage; but as the Committee of the House of Commons was assured that it is easier to divide by 4, 12 and 20 than 10, 10, 10, and the opinion having great weight, we have not progressed further toward the rational and civilized end—the adoption of tha system which has taken so much hold on the modern world.

The new issue of the bronze coinage in place of the mongrel copper currency, in 1860, is too recent to require any remarks, except perhaps that, with this as with all the rest of the coinage, there is vast room for an improvement in design.

The double sovereign or two-pound piece, which was first issued in the reign of Henry VIII, ceased to be coined afterwards till the reign of Charles II, when it appeared in company with the five-pound piece. These larger denominations of the gold currency have been issued by every monarch since; but there being now no demand for them, they, like the Gothic crown, only exist in collections.

In this paper my object has been to give a general history of the subject. The various mint marks, legends, origin of names given to the different pieces, the "reason why" of the multitudinous inscriptions are too numerous for one paper.

In concluding this short outline of a branch of our country's history, so important and interesting, but at the same time studied and understood by comparatively so few of our countrymen, I shall call attention to a proclamation, making the last "alteration" in the currency, which appeared in the *Gazette* of

the 6th February of this year. It declared all sovereigns and their halves, coined at and issued by Her Majesty's Colonial Mint at Sydney, New South Wales, to be current in Great Britain at par: hitherto they had been taken at—first sixpence and later threepence loss; a great injustice, not only to the mint of issue—which coined by the Royal consent, and therefore virtually on the same basis as that on Tower Hill—but also to those of Her Majesty's subjects who arrived in this country from that colony: they took these coins, issued by Royal proclamation at twenty shillings, in Australia; they arrived in England and could only get 19s. 6d. or 19s. 9d., which loss became very serious. These grievances the proclamation referred to abolished, and put the Australian sovereign at its right value.

NOTABILIA OF THE ARCHÆOLOGY AND NATURAL HISTORY OF THE MERSEY DISTRICT DURING THREE YEARS, 1863-4-5.

Compiled by Mr. Henry Ecroyd Smith.

(Read 3rd May, 1866.)

Part I.

An attempt is made in the following pages to offer a retrospective compendium of the rarer productions of our immediate neighbourhood, in Lancashire and Cheshire, during the past three years, in initiation of an *annual* report and record for the volumes of the *Transactions of the Historic Society*. The compiler has been induced to undertake the experiment from a conviction, shared in by valued friends, that the Natural History of the District has scarcely had its due position at the meetings and in the archives of the Society. The local *Naturalist's Scrap Book** did not, unfortuately, complete an eighteen months' existence; and whilst doubtlessly useful to some extent, it was issued in a form unsuited for a permanent source of reference of the noticed productions of the locality, although contributed to by some of our first naturalists. Its main records of discoveries, with other points of interest, will be found here reproduced, under the respective headings of Botany, Fauna, Ornithology, Entomology, or Conchology, with additional communications from various well-known naturalists, whose disinterested and most kindly-vouchsafed assistance the compiler takes this opportunity of gratefully acknowledging. Far from wishing to monopolize the compilation of such a report, he will be only too glad to

* Born April, 1863; expired August, 1864.

surrender the several departments to recognized students in these, to some of which he only stands in the relation of amateur. As regards Archæology, the circumstances are somewhat different; but like all the shorter notices in natural history the responsibility attaching to his description of the various antiquarian remains devolves wholly upon the writer.

It is essential to state that the "district" named is by no means limited to the arbitrary and most unsatisfactory one hitherto nominally retained, viz., nine miles round Liverpool or Woodside, which bound has been overstepped, at one time or another, by almost every contributor to the *Scrap Book*, the Editors of which ultimately added even a portion of Wales to their previously contracted limits! For the sake of argument, however, would any stranger to the neighbourhood imagine that the "Liverpool district," in this stricter sense, absolutely included an extent of land in a neighbouring *county* some *sixteen miles in length?* The more natural, comprehensive, and yet simple term used in these pages is, "Mersey district," (although it unavoidably encroaches upon the *Dee* shore,) which in general terms stretches from Warrington downward to the sea-board, there embracing Southport on the north and Hilbre upon the south.

Archæology.

Apart from the picturesque moated halls of the gentry, erected in the Tudor or Stuart period, the antiquities of the Mersey district have never made any great local display. The vestiges of its ancient erections existing in situ, so far as known, are, with little exception, confined to traces of one or two Roman stations—remains, mostly very meagre, of half-a-dozen religious houses and the rude foundations of the houses of long extinct villages once flourishing upon the sea-board, as that of Meoles, ancient Formby and the nameless one upon the island of Hilbre.

Perhaps the most interesting discovery of the past three years is that of Roman salinæ or salt works near the Weaver, the particulars of which have been kindly communicated by Dr. Kendrick of Warrington, to whose exertions the public are mainly indebted for the preservation of a perfect evaporating cistern and fragments of others, now deposited in the museum of that town. These relics substantiate the fact of the local production of salt from brine, for the past sixteen centuries, inasmuch as the "wyches" or salt springs of Cheshire, as well as those of Droitwich, are known to have been worked during the Saxon and early English periods.

The small coin finds by Otterspool have come too lately to the ear of the compiler to receive the attention and investigation they deserve; but he yet hopes to track the report of the later one to its source and possibly secure some of the dispersed pieces.

The annual antiquarian yield of the Cheshire shore which, for some years, had been diminishing, has lately increased somewhat both in volume and interest, although infinitely below the harvest which might have been secured during the early part of the present century; from how much earlier a date it were very interesting to know, but as vain to guess—no published record (save the finding of the old burial place on the Leasowe shore) appearing before 1846.

Coins at Otterspool.

About the commencement of the year 1863, a gardener named Wright, now living at Wavertree, but formerly in the employ of the late Oliver Holden, Esq., upon his beautiful grounds bordering the creek of Otterspool, found here a number of coins. He was engaged in "stub-"bing up" an old arbutus tree, when he observed some small circular rusty pieces of metal clinging to its roots; but as these were evidently neither of silver nor gold he merely

pocketed what he noticed, without searching carefully for more or for any trace of a receptacle, which is a subject for regret on various grounds, for discoveries of deposits of Roman coins in our neighbourhood are of the rarest occurrence. In this case only twelve were secured and of these two have been lost: the remainder are in my possession. All prove to be excessively worn, evidencing use extending over a long period, but the precise date of their issue it is more difficult to determine, as most of them are evidently villainous imitations of small brass pieces of some of the later Roman Emperors, reigning from the middle of the third to that of the fourth century. Two, almost equally barbarous, are of still later or Byzantine fabrication. So far as I have been able to decipher these worn pieces they may be catalogued as under:—

1. *Claudius Gothicus*, A.D. 268 to A.D. 270. *Reverse*, LAETITIA AVG; the Goddess standing.
2. *Numerianus*, A.D. 282. *Reverse*, $\frac{\text{L T}}{\text{XX}}$ within a wreath—not a common coin.
3. *Diocletianus*, A.D. 284 to A.D. 313. *Reverse*, $\frac{\text{VOT}}{\text{XX}}$ $\frac{}{\text{XP}}$ within a wreath.
4. *Constantius I*, (Chlorus), A.D. 293 to A.D. 306. *Reverse*, $\frac{\text{VOT}}{\text{XX}}$ $\frac{}{\text{T}}$ in a wreath.
5. *Licinius*, A.D. 307 to A.D. 324. *Reverse*, SOLI. INVICTO. COMITI. *In the field*, R.F.—a figure standing between these letters and holding a globe in the left hand.
6. *Constantine* family, precise Emperor undetermined.
7. Illegible.
8. Of small size, probably intended for a Valentinian.

9 and 10. *Byzantine*, Emperors unascertained.

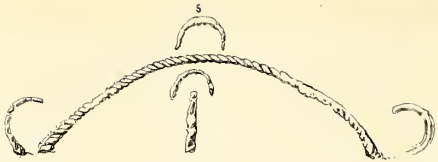
H. E. S.

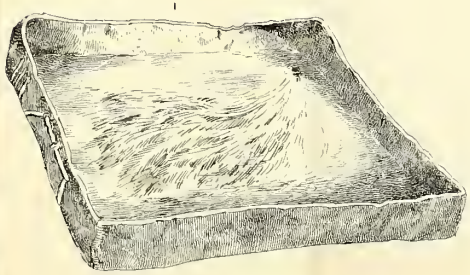
pocketed what he noticed, without searching carefully for more or for any trace of a receptacle, which is a subject for regret on various grounds, for discoveries of deposits of Roman coins in our neighbourhood are of the rarest occurrence. In this case only twelve were secured and of these two have been lost: the remainder are in my possession. All prove to be excessively worn, evidencing use extending over a long period, but the precise date of their issue it is more difficult to determine, as most of them are evidently villainous imitations of small brass pieces of some of the later Roman Emperors, reigning from the middle of the third to that of the fourth century. Two, almost equally barbarous, are of still later or Byzantine fabrication. So far as I have been able to decipher these worn pieces they may be catalogued as under:—

1. *Claudius Gothicus*, A.D. 268 to A.D. 270. *Reverse*, LAETITIA AVG; the Goddess standing.
2. *Numerianus*, A.D. 282. *Reverse*, $\frac{\text{LT}}{\text{XX}}$ within a wreath—not a common coin.
3. *Diocletianus*, A.D. 284 to A.D. 313. *Reverse*, $\frac{\text{VOT}}{\text{XX}}$ $\frac{}{\text{XP}}$ within a wreath.
4. *Constantius I*, (Chlorus), A.D. 293 to A.D. 306. *Reverse*, $\frac{\text{VOT}}{\text{XX}}$ $\frac{}{\text{T}}$ in a wreath.
5. *Licinius*, A.D. 307 to A.D. 324. *Reverse*, SOLI. INVICTO. COMITI. *In the field*, R.F.—a figure standing between these letters and holding a globe in the left hand.
6. *Constantine* family, precise Emperor undetermined.
7. Illegible.
8. Of small size, probably intended for a Valentinian.

9 and 10. *Byzantine*, Emperors unascertained.

H. E. S.

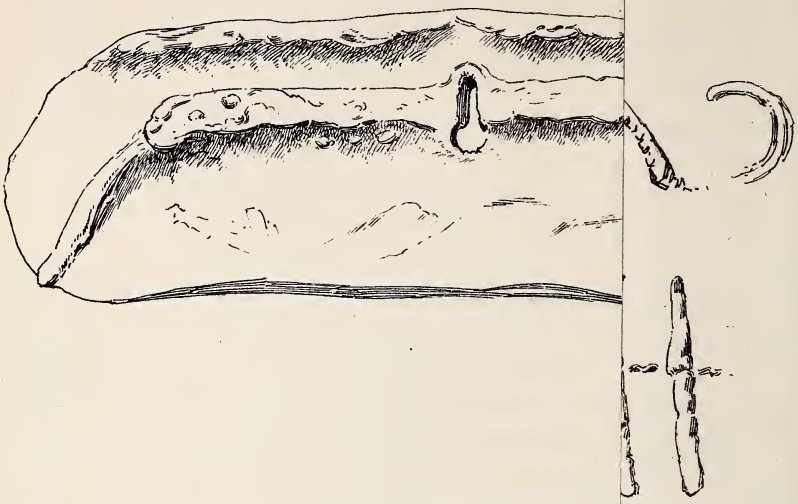




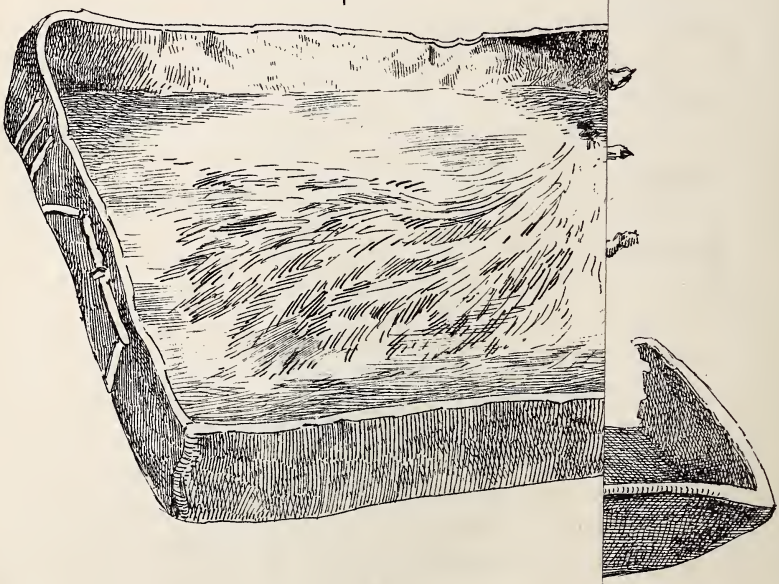
LEADEN SALT PANS OF THE ROMAN PERIOD

Found near Northwich, August 1864 and now in the Museum, Warrington.

6



1



LAWSON, 26, NORTH JOHN St. L'POOL.

Found

A second find of coins at Otterspool.

Towards the end of the year 1863, some navvies employed in the construction of the new line of railway from Liverpool to Manchester, *via* Garston, found, near the inner reach of this old creek, some coins; but fearful of their being claimed by other parties, they kept the matter so close that little beyond the bare *fact of the discovery* has at length leaked out,—too late, possibly, to be of use in tracking the coins. These are stated to be very small in size and with large letters for such a limited disc, which would lead to the conclusion of their proving *Stycas* of the Saxon kingdom of Northumbria or Deira. It is more probable, however, that should any of these pieces, reported to have been divided between the finders, be ever available for examination, they will be found of the same class as the preceding small lot, viz., small brass of the later Roman empire, or imitations made to supply a dearth of small coinage in the troublous times succeeding the retirement from this country of the Roman legions, in the fifth century.

H. E. S.

Notes on Leaden Salt Pans, discovered August, 1864, *at Northwich, Cheshire. By James Kendrick, Esq., M.D.*

The pans or cisterns were formerly four in number and had apparently been buried, ten feet below the present surface of the locality where they were found, by some far-distant inundation of the river Weaver, from the bank of which they were only a few yards distant.

Unfortunately, only one of the pans is now entire, the others having been broken up and sold for old metal by the workmen. One fragment, which I purchased from a marine store dealer and brought away with me, bears upon it in large letters, ƆEVE (see Plate I, fig. 3), and if the first letter may be considered an imperfect D, it was most probably intended

for the Roman name of Chester and may indicate that the Northwich salinæ belonged to that town.

The entire brine-pan (fig. 1) is now deposited in the Warrington museum, and is of an oblong-square form, being 3 feet 5 inches long by 2 feet $3\frac{1}{2}$ inches in breadth, inside measure. The depth is $4\frac{1}{2}$ inches, and the lead of which the pan is composed is about $\frac{3}{8}$ inch in thickness. The upper edge is thicker than the bottom or sides, forming a rim for the purpose of additional strength. The inner surface of the bottom of the vessel is thickly scored by the teeth of a rake used to remove the dross, so often deposited in the process of evaporation. Externally, the bottom of the pan bears traces of a coating of soot, probably from a wood fire, as half-consumed timber was found underneath the pan when discovered. At each end of the vessel is a hole in the side, apparently for the purpose of fixing it to a wooden framework, as fig. 6 on pan 1.

From another fragment of a pan, also in our museum, I send two casts of an inscription, device, or numerals in relief, composed of what looks like three C's, with as many upright strokes on either side, thus III CCC III (fig. 4), followed by a segment of a circle of cable ornament, &c., (fig. 5—on pan, fig. 2.)

I am of opinion that each brine-pan has been cast in a square flat piece and afterwards turned up at the four sides. My reason for thinking so is, that some of the ornamentation is on the precise angle formed by the side and the bottom of the pan.

If we may rely upon the statements of the workmen who discovered these pans, they appear to have been originally disposed *in a line*, their longer sides being applied together; and the finders were also of opinion that they had been raised upon some strong wooden posts, which were found along with them. A passage or flue would thus be established beneath

them, along which a current of hot air might flow from a wood fire at one end, without any direct application of flame to the lower surface of the pans.

I venture to suggest that these brine-pans, vats or cisterns are of Roman date and manufacture, for the letters, of which I send casts, are in the Roman character, and the cable or raised-cord ornament was of frequent use in the decoration of leaden utensils by the Romans, as shewn in the chests and coffins of this metal, depicted by Mr. C. Roach Smith in the *Coll. Antiqua.*

It is also not improbable that the salinæ named by the geographer of Ravenna as near Chester, may have been at Northwich. At the same time it is singular that in several early mediæval Latin charters connected with Droitwich, such brine-pans are termed *Plumberia*, a certain number of which constituted a *Bullerium* or boiling.

But whether of Roman or mediæval date, the brine-pans found at Northwich may be ranked amongst the most interesting of our local relics, and I hope that the preceding description, together with the casts which I send, may draw the attention of some local archæologist to their further illustration.

Dr. Kendrick's facts, as above stated, are an interesting novelty in English archæology, and I trust will secure among our antiquaries the attention they undoubtedly deserve.

That salt was in general use in ancient times is notorious, and its production from pits and mines in our country is asserted by Fosbroke* and others, but up to the period of the discovery of these vats no traces had been met with of the production of this general condiment by boiling. The mines at Droitwich are mentioned in the year 816. Iron cauldrons for boiling salt occur in Du Cange,† and leaden ones are

* Encyclop. Antiq., I, 507. † V. Caldariæ.

mentioned by Nash.* Various kinds of salt or rather alkalis were made in early times by pouring sea-water or brine over burning piles of wood, gradually and in small quantities, so that the fire was not extinguished, by which means the water evaporated, leaving the salt behind, but mixed with charcoal ashes, earth and alkaline salts.† Tacitus states a similar process obtained among the Hermanduri and Catti,‡ and the descendants of the latter pursue an identical or, at any rate, analogous system at the present day in the manufacture of Frisio salt.

We may safely assert that some species of salt was manufactured in the pans or vats found on the banks of the Weaver, for salt springs abounded in the vicinity, and Dr. Kendrick's general deductions appear reasonable enough as to the mode of using these utensils. Their age would have been very questionable had it not been for the characters remaining upon the outer surfaces, which are certainly Roman and in all probability are a portion of the maker's name; allusion is here made to fig. 3. Of fig. 4, Mr. Roach Smith (to whom I submitted drawings of the casts) remarks:—
"The III preceding and following the numerals CCC may
"only be ornaments. The pattern is not at all unlike some
"we find upon Roman coffins and coffers. I have no doubt
"of the fragments being Roman, but I am not aware of any
"similar works having been found at any other place where
"the Romans had salterns."

All the sketches in the plate have been referred to except fig. 6, which displays some rude lines in relief, designed probably less for ornament than for strengthening around the orifice, presumed to have been used for suspending the pan over the fire, and in form resembling an inverted key hole. Upon the left are three strokes or numerals like those preceding and following the C's in fig. 4. The rudeness of the

* Worcestershire, I, 296. † Beckman I, 493. ‡ Annal. XIII, 57.

characters and devices is scarcely to be wondered at when the coarseness of the work and the size and roughness of the utensils themselves are considered. Our present limits forbid more extended remarks upon this most interesting subject, and the writer must content himself by thus publishing the facts of a valuable discovery, as well followed up as circumstances permitted by our worthy and able associate, Dr. Kendrick.

H. E. S.

*Produce of the Cheshire Sea Shore.**

The past three years have proved but moderately propitious for the exposure of the class of antiquarian objects which, during the last half century, have at times abounded on portions of our sea-board.

The *number* of such is still considerable, but the yield is decreasing in value and importance, partly owing to the rare conjuncture of strong N. or N.E. winds with the higher spring tides, without which the accumulated sand from the constantly undermined banks and hills to landward is insufficiently cleared to disclose articles of metal, whose weight has sunk them into hollows of the blue silt, forest soil or ancient arable land, as the case may be. Possibly, also, the sea may be approaching the *landward* limit of the area within which any large number of relics can reasonably be expected to occur, inasmuch as high water of our spring tides now gains a point which can be little, if anything, short of a mile from the ancient settlement, subsequently the Meols of early English times, the inhabitants being finally driven inland three to four centuries back. The promontory upon which it no doubt stood is reduced to a small sandbank, only visible at low water and constantly decreasing in volume.

At some trouble the accompanying Sections (Plate II) of

* A portion of the discoveries here chronicled will be found in the pages of "*The Reliquary*," in the form of annual reports for the years 1863 and 1864, supplied by the writer.

the strata of the Cheshire shore have been arranged, to illustrate their average depths in the past few years, from the writer's experience during frequent visits at all states of wind and tide. In consequence of the ever varying depths of these deposits, it has been found impossible to render, at any one spot, an accurate illustration of the strata and their contents, natural and artificial, in any other mode.

Section I supplies this information for the immediate vicinity of the "Dove" landmarks, one of which is in close contiguity to the beach, and through the tidal ravages has every few years to be refixed further inland; their line points to the Dove sand spit to seaward, the sole remains of the once considerable and elevated promontory mentioned, where there can be little doubt a small sea-port, both in Roman and Saxon times, must have existed.

Section II shews the arrangement of strata at the point where the skeleton, "*The Prehistoric Man of Cheshire*" of Sir Edward Cust, was discovered; and it will be quite evident upon examination that no early date can be attached to the remains. The chief feature by which this section is distinguished from the former is the absence of the artificial stratum of soil more at length to be described. It is unfortunate that in *Ancient Meols* this is confounded, under the name of peat, with the two much lower beds of early arboreal growth, whilst a section (page 24), intended to illustrate the shore-strata from Dove Point north-easterly, is, by mistake, made to run directly inland, or from N.W. to S.E.

Primeval.

No. of Objects.

2 FLINTY LIMESTONE.—Rudely fashioned *Heads of Spears.*

21 FLINT.—*Arrow-heads* and other small instruments, black, white and red in colour. Several of the sharpest and best forms found just uncovered by the tide from the upper woody deposit (F), or the thin superincumbent bed of clay.

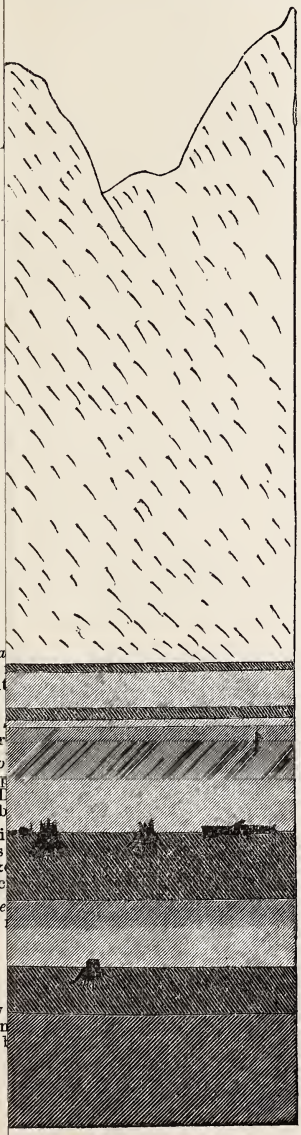
23

VE H OF CHESHIRE,

, 1860—1865.

SECTION II.

ST END OF LEASOWE EMBANKMENT.



NOTE.

The Strata of this Section are respectively identical with those similarly lettered in Section I.

HIGH WATER OF SPRING TIDES.

Peaty matter, but destitute of Trees.

1 Position of the Skeleton found 22nd January, 1864.

Upper Arboreal Deposit.

Lower ditto.

H. Ecroyd

L. Jewitt, sc.

the strata of the Cheshire shore have been arranged, to illustrate their average depths in the past few years, from the writer's experience during frequent visits at all states of wind and tide. In consequence of the ever varying depths of these deposits, it has been found impossible to render, at any one spot, an accurate illustration of the strata and their contents, natural and artificial, in any other mode.

Section I supplies this information for the immediate vicinity of the "Dove" landmarks, one of which is in close contiguity to the beach, and through the tidal ravages has every few years to be refixed further inland; their line points to the Dove sand spit to seaward, the sole remains of the once considerable and elevated promontory mentioned, where there can be little doubt a small sea-port, both in Roman and Saxon times, must have existed.

Section II shews the arrangement of strata at the point where the skeleton, "*The Prehistoric Man of Cheshire*" of Sir Edward Cust, was discovered; and it will be quite evident upon examination that no early date can be attached to the remains. The chief feature by which this section is distinguished from the former is the absence of the artificial stratum of soil more at length to be described. It is unfortunate that in *Ancient Meols* this is confounded, under the name of peat, with the two much lower beds of early arboreal growth, whilst a section (page 24), intended to illustrate the shore-strata from Dove Point north-easterly, is, by mistake, made to run directly inland, or from N.W. to S.E.

Primeval.

No. of Objects.

2 Flinty Limestone.—Rudely fashioned *Heads of Spears.*

21 Flint.—*Arrow-heads* and other small instruments, black, white and red in colour. Several of the sharpest and best forms found just uncovered by the tide from the upper woody deposit (F), or the thin superincumbent bed of clay.

23

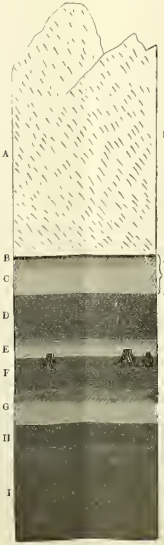
VERTICAL SECTIONS OF THE SEA-BEACH OF CHESHIRE,

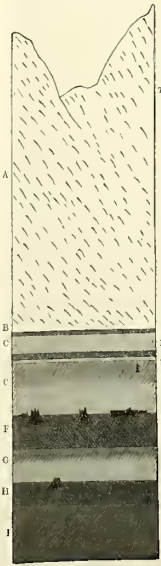
SHOWING THE AVERAGE DEPTHS OF THE STRATA, 1860—1865.

SECTION I. WEST SIDE OF THE DOVE MARKS.

Scale ⅛ Inch to 1 Foot.

SECTION II. EAST END OF LEASOWE EMBANKMENT.





NATURAL MATERIAL AND CONTENTS.		ARCHÆOLOGICAL REMAINS.
Loose Shifting Sand.	A	Lowest portion, mediæval fish-hooks and other objects, mostly of iron and badly corroded.
Marshy Deposit.	B	HIGH WATER OF SPRING TIDES.
Firm Drift Sand.	C	Chiefly mediæval articles; in the lower part of the sand a few earlier ornaments occur.
Artificial Arable Soil, composed of bog and sand, mixed with a little marl; it is often carted up to the gardens of the adjacent village of Great Meols.	D	Mediæval, including fragments of pottery, accompanied by bones of domesticated animals, as Bos Longifrons, Horse, and many species of Dog, with refuse sea-shell, including Oyster, Mussel, Clam, Cockle, and Periwinkle.
Blue Marl or Silt, with numerous petrified roots of Equisota and other fresh water plants.	E	Saxon and Norman Coin and other objects.
Arboreal Deposit, abounding in arboreseent material, including many stumps of trees, and a few prostrate trunks. Animal Remains—Deer, Ox, Horse, Wild Boar &c.; also, some species of both land and fresh-water Shells.	F	S.W. End, Saxon Coin &c. N.W. End, Roman Coin, Brooches &c. In the lower portions a few arrow heads of flint, stone, and shell.
Blue Marl, with remains of Bos Primigenius and Megaceros Hibernicus and Cetacea. It is subject to separate into octagonal &c. divisions, and is much traversed by vegetable fibre of ancient growth	G	No relics of Man or his Works, save a few primeval flints.
Lower Arboreal Deposit, containing a few Tree-stumps. No anatomical remains known.	H	No relic of Man or his Works known.
Boulder Clay or Marl, usually a dull red colour. It has not been bottomed here, but is known to fill the lower bed of the Wirral basin of the Keuper Sandstone.	I	Ditto.

NOTE.

The Strata of this Section are respectively identical with those similarly lettered in Section I.

HIGH WATER OF SPRING TIDES.

Peaty matter, but destitute of Trees.

A Position of the Skeleton found 22nd January, 1864.

Upper Arboreal Deposit.

Lower ditto.

H. Ecroyd Smith, del.

L. Jewitt, sc.

No. of Objects.

23

3 Triangular pieces, each sharpened on two sides and apparently intended to be cast from a cleft-stick rather than as arrow-heads; they were picked up on the beach of Hilbre.

4 Limestone.—Objects similar in form and use to the last.

5 Shell, apparently of the Oyster.—Ditto. Two are perforated.

1 Hard Gypsum.—Object pointed-oval in form, and 2 inches long.

2 Stone.—*Wedges* of an elongated-diamond shape, but with the sides more extended at one end than the other.

Romano-British.

1 Bronze.—"*Second-brass*" *Coin* of the Emperor Claudius, A.D. 41 to A.D. 54. *Obverse* . . CAESAR. AVG. PM. TRP. . . . . ; *Reverse* completely illegible, but more so through wear than oxidation, as is the case with most of the bronze coins of this era found upon the shore, thus contrasting strongly with the Saxon silver pieces which, though few in number, are in excellent preservation. This Claudian coin was, as usual, washed out of the upper part of the woody deposit (F), evidently proving this stratum to have been the surface of the ground until late Roman times, but no objects of a later date (*i.e.* Saxon or English) are ever out-turned from it.

1 Small brass *Coin* of *Claudius Gothicus*, A.D. 268—70. *Reverse*, VICTORIA AUG.

1 Ditto of *Constantinus Magnus*. *Reverse*, PROVIDENTIÆ . . . ; in the field the Gate of a Castrum.

1 Ditto of same Emperor. *Reverse*, GLORIA EXERCITUS; *in the field*, two soldiers standing with spears and shields; between them two standards.

42

No. of Objects.

42

1 Small brass *Coin* of about the same age as the last, but illegible.

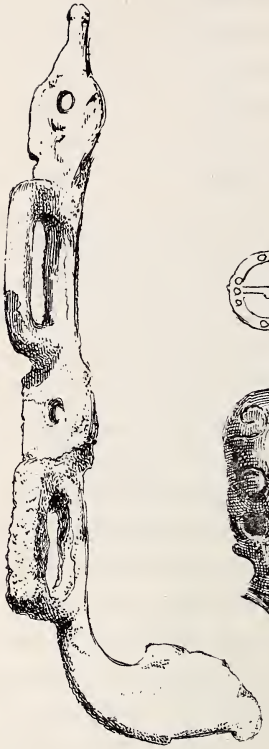
1 Ditto apparently struck by one of the Constantine family; it belongs to the *Minimi*, or smallest size of coins; in brass; such were not half the size of the average of small or "third brass," and would seem to have been struck for free distribution upon public occasions, like the small common medals of our own times.

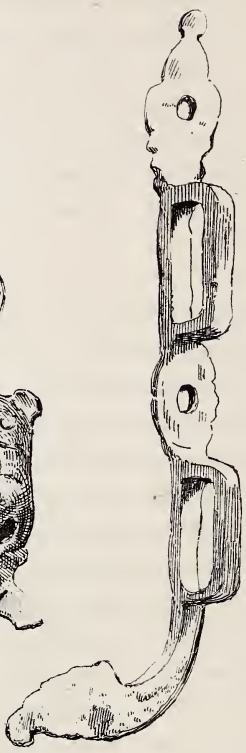
1 *Ear Pick*, $2\frac{1}{2}$ inches long.

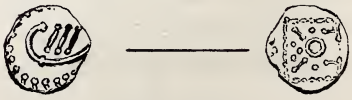
4 *Pins of Brooches*, in bronze.

1 *Brooch*, 2 inches long, of the common "harp" shape, but a slender and well-formed type. A small circular hollow, in the centre of the breast, has probably been enamelled. This object was picked up upon the blue clay or silt (G), having been washed out of the forest peat (F), and would seem to be as much worn by friction against the stones on the beach, as through original use. Its occurrence on the shore, opposite the Leasowe Hotel, nearly a mile and a half north-eastwardly of any previous find known to the writer, extends the longitudinal area of the antiquarian site, exclusive of Hilbre Island, to *four miles*. It must not, however, be supposed that the various classes of objects occur indiscriminately, inasmuch as the Roman are exclusively confined to the north-eastern or Leasowe end, and to the more wooded part of the ancient forest, which without doubt was flourishing in all its glory during the Roman occupation of this country, (say A.D. 55—450); whilst the mediæval articles have mostly been picked up upon the Hoylake side of the Dove marks, a few objects of

50







(REDUCED

(ACTUAL SIZE)

REDUCED

J.Lawson Lith 26 North John St

OBJECTS FOUND ON THE CHESHIRE SHORE

Coll. H. Ecroyd Smith.

No. of Objects.

50 intermediate age being exposed in wind-opened gullies of the sand-hills themselves.

1 *Penannular Brooch,* 1 inch diameter, with its extremities folded back to prevent the pin from slipping off. This description of fibula, although often found with remains of various earlier, as well as later dates, has so repeatedly been met with where no recognised Saxon or later English fabrications could be found, that seeing our example occurred in the *Roman deposit or stratum,* I can place it confidently here.

3 *Heads* of Dress or Hair pins, plain.

1 *Cap* with eyelet $\frac{5}{8}$ inch diameter.

1 *Check or Cheek-piece of a Bridle,* $4\frac{1}{2}$ inches long (Pl. III, fig. 3), with two rectangular loops for the attachment of the smaller straps, and a couple of intermediate holes for rivets to secure the whole to the stout lateral band of the bridle. A similarly fashioned object, but for the opposite or left side (Pl. III, fig. 4)—in other ways only differing in being a little less stout—was found about 1850 to 1855, and is in Mr. Mayer's collection, together with a smaller example of the same class of rare objects, an inch shorter and possessing but one loop and one rivet-hole; which may have been used possibly for a small native horse or pony, for the existence in our island of asses or mules at this period is, I believe, not ascertained. The last-named objects are engraved in Dr. Hume's *Ancient Meols,* Plate XXVIII, figs. 12 and 13.*

1 Portion of *Sheathing* or Plate, apparently from the rim of a helmet, 5 inches long.

1 Iron.—A remarkable instrument (fig. 2), apparently an

—— example of the *Culter Secespita* (slaughter-knife) of

58

* Compare with more elaborately-formed cheek-pieces and bits among the Etruscan bronzes of the Mayer collection.

No. of Objects.

58

the Romans, and found under the following circumstances:—William Banks, a fisherman of Great Meols, was passing along the upper reach of the shore to visit his nets beyond the Dove Spit, when, keeping as usual a good look out for curiosities, he noticed protruding from a patch of the black woody deposit (F), freshly uncovered by a spring tide, an iron ring. Upon stooping to pick it up, he was surprised to find it fast, and a hard pull was necessary to extract the fourteen inches of metal attached to the loop, and tightly imbedded in the fibrous mass, the unctuous, antiseptic properties of which have fortunately preserved to us many iron instruments, whilst others of similar use but infinitely later date have become so far oxydized in their damp *sandy* beds, as usually to drop to pieces upon exposure. The loop or ring at top of our instrument, for its suspension from the belt or girdle of the *Victimarius* (butcher), seems to be somewhat crushed out of shape; it is $1\frac{1}{2}$ inch across. To this a long and stout shaft, 5 inches long, is attached, forming the centre of the haft, and pierced by seven holes for large rivets, which have secured the outer handle of *deer's horn, bone or wood.* To this succeeds $5\frac{1}{2}$ inches of actual knife, sharply edged upon one side, the whole blade terminating in three inches of a gradually diminishing volume, with a *blunt* point; the intention being to insert the last deeply in the throat, say of a stag, and then to slash away with the edged (knife) portion. In this case it would seem that the *Victimarius* had not as usual secured this important weapon to his person, or that it had become loose through fracture of the girdle, or he would hardly have stuck it so deeply into the firm vegetable mass, where, in all probability, it

58

No. of Objects.

58 would soon be covered up by the loose leaves, and ultimately lost or left behind, the precise locality being forgotten and undistinguishable.

1 An example of the *Culter Excoriatorius,* or skinning-knife (fig. 1), found at the same time at a short distance from the former, and under precisely similar circumstances. This instrument is shorter, but very interesting through its retention of a *handle of ash,* a species of wood chiefly used not only for the handles of tools, but of weapons of many kinds, as the shafts of spears, lances and arrows; in fact, *ash* in early Saxon poetry is absolutely synonymous with *spear.* The length of this haft is $3\frac{3}{4}$ inches, whilst the blade, though much broader than that just described, is thinner and much sharper, thus well adapted to its specific purpose; being also rounded off rapidly to a sharp point at the extremity of the blade, which measures $5\frac{3}{4}$ inches in length, by 1 inch in breadth near the haft. Knives of this shape are unusual, and such do not appear in the now very numerous works illustrative of Roman, Saxon and Norman knives found in this country. In Pompeii, however, the exact contour is found, and a good example, discovered in a house of that invaluable depot of Roman artistic treasures, is figured in the Rev. Edward Trollope's "*Illustrations of Roman Art,*" Plate xxviii, fig. 19. This, like our Cheshire specimen, retains its original—apparently *wooden*—handle.

These notable early instruments of iron, thanks to their truly conservative "surroundings," are in most excellent preservation, considering their age; the first had, however, been nearly divided in the centre, but it is again strong through the prompt application of boiled linseed oil, without which no old iron objects can be securely retained for any length of time.

59

No. of Objects.

59

1 *Knife-blade,* perfect, being 5½ inches long, of which 3½ comprise the blade proper, which is still sharp at the point. The contour of the back is more gibbous than usual among the knives found here, but it is difficult at all times to determine between Roman and the early Saxon ones, or rather perhaps *late Roman-British,* found in Saxon graves, as at Oxingell, near Ramsgate.*

1 Flat ornamental object, 2½ inches long by ½ inch broad.

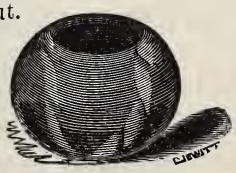
2 Weapons with lance-shaped points, somewhat angular blades, about 2 inches long, and square shafts; such occur not infrequently upon Roman sites.

1 Lead.—*Spindle Whorl,* an inch in diameter.

1 Terra Cotta.—*Spindle Whorl,* 1¼ inch in diameter, formed apparently from a piece of Samian ware, as a little of the glossy red glaze of this handsome fictile ware yet remains. It has become softer and more porous than usual, and would seem to have been fabricated out of the bottom of a large bowl, being very flat, but not perfectly so. Found in a little gully of the woody surface among "black slutch."

1 Glass.—Small *fragment of a basin,* bluish in colour, and with a finely grooved concentric line; glass of the Roman period is very scarce upon the shore, only two or three fragments having been found.

1 *Bead,* composed of transparent glass, of a beautiful cobalt blue colour, ornamented by a marbling band of yellow enamel, which is intertwined by a small thread of green, also enamel, and like the yellow, opaque. The size is rendered in the subjoined woodcut. Compared with similar articles found in this country, my example, in point of pattern, is, I believe, unique. In size, compo-



67

* Vide Coll. Antiqua, Vol. III, Pl. 1.

No. of Objects.

67 sition and general character, it ranges with odd beads found at Roman stations and towns, and also with the central beads or gauds of necklaces often discovered in connection with interments of Saxon ladies. Even in these latter instances, Mr. Mayer agrees with me in believing the objects in question to be of Roman manufacture, for their designs are more tasteful, and the glass far purer and of richer colours than Saxon manufactures can show. They were evidently highly prized, and deservedly so, by the Saxon fair, and the late Messrs. Fawcett and Douglas found such often suspended singly upon metal ear-rings or upon the breast. Out of sixteen instances where such have formed parts of necklaces, I find *fourteen* present a single gaud in the centre of a larger or smaller number of small-sized beads—only in two are the large beads found to occur in duplicate. Upon close inspection, many of these prove to be of precisely similar composition to the Cheshire example; and, curiously enough, the latter would appear to have been deposited under analogous circumstances, having been excavated by a rabbit from its burrow on Hilbre Island, upon the site of the burying place attached to the cell of monks here existent about VII to XI centuries. The head of a Saxon Sepulchral Cross in stone was also found here some years ago, and in all probability it marked the ancient holy ground, a spot once the resort of pilgrims from far and near.

1 Glass or Stone.—*Bead*, 4½ lines diameter, of a dark brown colour.

1 Stone.—*Spindle-Whorl*, of a pale drab-coloured soapstone, 1¼ inch diameter, with a well-worn orifice; it is ornamented upon one side by a double ring of annulets, *incuse*. This disc, differing from any others I have

——

69

No. of Objects.

69

seen, was found upon the old Roman wood surface, (here many feet under ground) about half-a-mile from the beach. It is probable, however, that this wood extended over the whole of the low ground northward from West Kirby, Irby, and Thurstanton hills, so that, notwithstanding the enormous waste of the beach, the stratum thus continuing inland may yet produce many objects of interest, and perhaps of value. The cause of discovery in the present instance was the delving for foundations of piers of a bridge, near Great Meols, for the spanning by the road of the new railway to Hoylake. The navvy who picked it up was, in his ignorance, about to throw it away when it was secured for the writer.

1 *Amulet* of Hæmatite, 1 inch long, and of about 8 lines in greatest width, being pointed, and merely a splinter from a nodule of this rich iron ore,* rubbed smoothly down. Many others have been seen on the shore and discarded as mere pebbles, but the writer has fortunately secured several. Like this example, they all retain, more or less, a natural form, but invariably exhibit one or more sides artificially abraded. Fosbroke informs us† this mineral, supposed to possess cabalistic virtues, was mostly used by the ancients for *abraxas* and *talismans*, especially by the Egyptians, *vide Caylus Rec. VI, pl.* 44, *n.* 2.‡ As none of these objects have an orifice, they cannot have been suspended round the neck, and consequently must have been retained about the person, either in the girdle or the purse, pouch, or later *gypciere,* for superstitions linger long. The firm belief that this mineral, partaking to some extent of

70

* Containing average of 60 per cent. of iron.

† Encyclop. Antiqs., vol. i, p. 460.

‡ A piece of Hæmatite was found with a fine dagger, spear-head of flint, and a bead of Kimmeridge clay or jet &c., in the ancient British barrow, Nether Lowe, Chelmorton, Derbyshire, *vide* Bateman's "Ten Years' Diggings," p. 32; "Catalogue," p. 37.

No. of Objects.

70 the properties of the loadstone, was efficacious in keeping evil spirits at a respectful distance, might possibly obtain credence even in late mediæval times.

2 Portions of whetstones, one of which is broad and flat, the other of a rounded form, very similar to that (of much larger size) now used by mowers.

Animal Remains.—The woody deposition F, in which the anatomical relics of this period lie, has not exhibited so many examples as formerly of stags, oxen, horses, wild boar, dogs, &c., a few fragmentary antlers, bones, teeth, and tusks being all the writer has to report as noticed, but during rough weather it is probable the higher tides excavate and carry out of the reach of observation matter of this kind, which through loss of much of the animal gluten are light, and thus easily borne away, whilst objects of metal are left exposed or washed into adjacent holes; with the exception of the teeth, which through the hardness of the enamel are less liable to decay.

Skull of the *Bos Longifrons*, and well-worn *Tusk* of the *Sus Scrofa*, or wild boar. The former has repeatedly occurred upon our shores, but like the present example (battered upon the beach by breakers during a strong North-west gale), none are perfect or comparable to one in the Brown Museum, Liverpool, which was found in the old forest bog, along with antlers of deer, during the excavation of the Great Float, near Birkenhead (five miles distant), a few years ago. The specimens washed out of the shore bank have been in the *artificial stratum* of soil (D) which extends above the Western portion of the forest peat (here gradually diminishing in thickness), for several hundred yards, itself super-piled by drift sand to very varying heights. It is an admixture of the bog and sand, with the addition of a little marl, a perfect

No. of Objects.

72

amalgam of all the available material, which has evidently constituted for many centuries the arable land of the long extinct village of Meols, which must have been situate a mile to the Northward of the present hamlet, still called Great Meols, but this is for distinction's sake—a still smaller hamlet of the same name lying nearer the Dee. When, after a concurrent high wind and tide, a fresh portion of the surface of this old soil is uncovered, it is not uncommon to trace clearly the furrows left by the ploughshares of the "forefathers of the hamlet." The archæological products of this artificial soil have gained the especial attention of the writer, and he thinks they bear strongly on the present subject. They consist, he conceives, of 12-15th century articles, a few perhaps being later *but none earlier*, as metal buckles, ornaments and other attachments of straps, rings, a few coins of Edward I and II, portions of leathern shoes and wooden pails, crocks &c.; whilst the osseous remains are those which might naturally be expected, mostly stray bones of the domesticated animals of the locality, viz.—ox, horse, sheep, goat and dog, the last of by far the most frequent occurrence. Through the constant discovery of bones of the *Bos Longifrons* upon Roman and other early sites, it has too generally been surmised that this had ceased to exist, at least as a distinct species, before the Conquest; but finding its remains as above stated, and not more noticeably decomposed than those of other animals with which they lie intermixed, the conclusion seems inevitable that the *Bos Longifrons* has, in some districts, continued until the 12-13th century, if not later, in common with the Roebuck (of which the writer possesses fine antlers from the shore), a species of stag still extant in England, but confined to fastnesses of the

— Devon forests, though possibly re-introduced.

72

No. of Objects.

72

Saxon.

1 SILVER.—*Sceatta*, of one of the early Kings of Kent, and not later than Ethelbert I, who, reigning A.D. 561-6, is the earliest to whom any of these pieces, including a few bearing his own name, have been satisfactorily appropriated by numismatists. Our example, fig. 5, although nearly resembling two distinct types figured in Ruding's *Annals of the Coinage*, pl. I, figs. 8 and 9, yet differs from each in points of detail, even making allowance for its having been evidently much reduced in size from its original proportions. It contains on the obverse (?) a number of pellets distributed among the letters and rude ornament, which are totally absent in the otherwise similar type of Ruding's plate, fig. 8. Through the clipping process, it has lost so much weight, that in place of an approximation to an average of these coins—some 16 to 17 grains—our piece only gives *seven*. This sceatta is the only one of its class known to have been found upon the Cheshire shore; like the later pieces (silver pennies) of Ethelbert II and Canute, it is in excellent preservation; it was found in the very limited *littoral* bounds within which the purely Saxon remains have occurred.

1 BRONZE.—*Head of a Brooch*, 1¼ inch long by 1 inch broad, of doubtful late Roman-British or Saxon fabrication, but it appears most nearly to approach the well-known cruciform types, though the apex or top-bar is hollow and cylindrical, and the breast grooved and very flat, in fact appearing like an imitation of the Roman harp-shaped fibula.

1 *Dress* or *Hair-pin* in brass, of the Irish type, originally about 4 in. long, the head lozenge-shaped, with face and side facets on either side, and all engraved with small pattern, surmounted by a small moveable de-

75

No. of Objects.

75 pressed loop, bearing three crosses; the shaft is quite plain. A similar one exists in the Royal Irish Academy's Museum.

1 Lead.—Small conical *Spindle-Whorl.*

8 Iron.—*Clench-bolts,* or double-headed rivets, precisely analogous to those numerously found about human remains in the Saxon cemetery at Oxingell in Kent, at Châtillon near Bénouville,* and likewise in tumuli. At Oxingell they occurred both under and above numbers of the skeletons, and are believed by Mons. Charma and others to have been used for fastening the *handles of bucklers* throughout ancient Scandinavia.

1 *Head of Iron Nail,* seven-eighths of an inch diameter.

Norman and Mediæval.

1 Silver.—*Penny* of Henry II.

1 *Halved Penny* of Henry III, mintage uncertain.

1 *Penny* of Edw. II, minted at Bristol.

1 *Ditto* of Edw. III, of the London mintage. It was found in the spring of 1863, by Amos Ledsham, a young market gardener at Wallasey, whilst sowing peas.

3 Latten.—*Finger-rings,* two formed of flat the other of round wire, one of the former is ornamented with dots and annulets.

3 *Ear-rings,* all plain; two are of flat wire, the other rounded and of an older and more tapering form.

2 *Fermails* or plain Ring-brooches; both are but half-an-inch diameter, and one retains its *acus* or pin.

4 *Pins,* two 1½ in. long, of fine wire, with solid semi-circular head; two of stouter make.

3 *Needles,* one 4 in. long, two 2 in., the other intermediate.

104

* Coll. Antiqua, Vol. III, Pl. 1;—Mems. de la Soc. des Antiquaires de Normandie, Vol. xix, p. 485.

No. of Objects.

104 All are formed of rolled thin sheet metal and have a circular eye in a flattened and pointed head.

4 *Objects* made of wire, flat on one side and somewhat raised on the other, about 2 inches long, and of varying forms; two others flat; they are all of uncertain use.

1 *Clapper* of a handbell.

1 *Winder* for thread or other fibre, shaped like the rowel of a spur, but several of the spikes are gone.

38 *Attachments* originally riveted to girdles or smaller straps of leather for securing the dress; they comprise various types of buckles, hasps, tags and ornaments. One stud retains a fragment of leather.

9 *Miscellaneous fragments*, one of a triangular needle, much resembling those of steel used by sail-makers of the present day.

2 Iron or Steel.—*Girdle-hasp* and portion of a large *buckle*.

1 Flat *Ring* or washer, 3 in. diameter.

1 *Prych* or goad of a Norman spur.

1 Lead or Pewter.—*Sling Pellet* of globular form.

1 *Net-sinker* (?) round, perforated, and with radiated pattern.

1 *Brooch* in pewter, of lozenge shape, $1\frac{1}{2}$ in. long, with trifoliate ornament at the angles, the acus fixed upon a short transverse bar in the upper part of the open centre.

1 Second *Brooch* in pewter, of similar shape, slightly differing in size and pattern.

1 *Wheel-shaped Brooch* in pewter. Originally this must have been two inches in diameter, and composed alternately of spoke-like divisions and concentric circles or rings, the latter covered by the dot and annulet ornament.

9 *Brooches*, more or less imperfect, all unfortunately being minus the *acus* or pin. One is ring-shaped, and though plain on one half (side) is ornamented upon the other

175

No. of Objects.

175 by a pretty spiral and digitated groove; this example, the second of its type which has occurred, is of pewter, and 1 inch diameter. The remainder are fragments of ornaments more elaborately designed, but of too fragile a nature for such designs, except one $2\frac{1}{2}$ inches long, and originally the brooch would have been about the same diameter. This bears letters *incuse* (as though stamped from an impression in metal of some seal), viz., ALSVNO &c., but the meaning of this fragment of an inscription I will not venture to speculate upon. Possibly some list of mediæval devices and mottoes may elucidate the matter.

2 *Hasps*—one, only two-fifths of an inch diameter. It is circular, and provided with a central bar, the whole ornamented with raised dots or pellets.

1 *Buckle* (or hasp), three-fifths of an inch diameter.

6 *Studs*—two plain, spade-shaped and round; three have floral forms; the sixth bears the character of a *Gothic Text* m, fig. 6, and may possibly prove to be a relic of one of the English *Primers* of mediæval times, stone moulds for the casting of which yet exist, as recorded in the Messrs. Chambers's admirable "Book of Days," vol. I, p. 47, in the possession of Sir George Musgrave, of Eden Hall, Westmoreland. These cast leaden plates with raised letters, for "teaching the young idea," were the precursors of the Horn-books, the primers of the 16th and 17th centuries.

1 *Frame of window-pane*, of triangular form, probably from one of the last tenanted houses of ancient Meols.

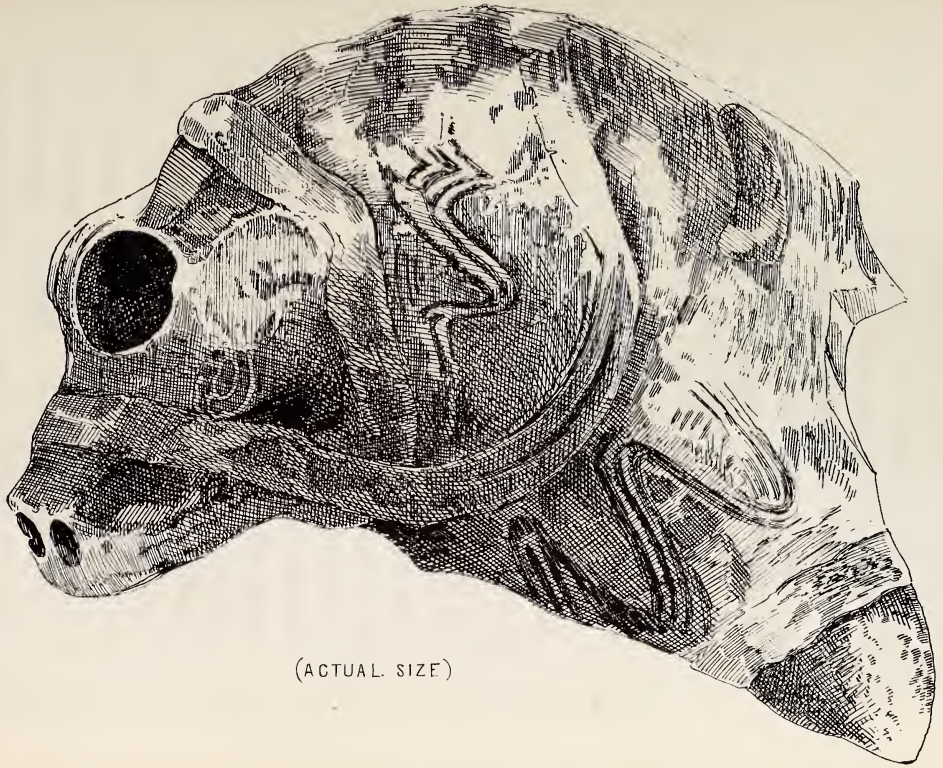
1 *Handle of spoon* with acorn head.

5 *Key-eylet* and four miscellaneous objects.

2 LEATHER.—*Shoe Soles*, "right" and "left" being very much produced, the toe being very sharply pointed, and the portion below the instep very confined. Their shape

193

H. S. of L. & C.



(ACTUAL SIZE)

J. Lawson Lith. 26 North John St.

FRAGMENT OF EQUESTRIAN CROCK OF XIII CENTY FOUND ON THE CHESHIRE SHORE, 1865.

Coll. H. Ecroyd Smith.

No. of Objects.

resembles that of many found in an ancient mediæval midden, belonging probably to one of the last of the houses of Ancient Meols. Length 11 inches; extreme breadth across the toes $3\frac{3}{4}$ inches, but when worn would be a little in excess of present size, the leather having shrunk to some extent, but now protected by the application of oil.

1 Bone.—Object nearly an inch and a quarter long, and averaging half an inch in diameter, perforated longitudinally, and cut, not sawn from the bone. It has probably been a rude bead formed to amuse a child.

2 Stone.—*Fragments of Querns.* One of the "mule" or flat understones has been made of the coarse rag stone or conglomerate, hard as granite and full of small pebbles of white quartz; the other is part of a "rider," and retaining one of the holes by which this was revolved in grinding.

1 *Roofing Sandstone,* with pinhole, from one of the houses of Ancient Meols.

1 *Tombstone,* 11 or 12 century, found on Hilbre Island, September, 1864. For description and illustration, *vide* Transactions, vol. V, new series, p. 271.

1 Terra Cotta.—Portion of a unique Equestrian Figure of light-coloured clay, partially covered with a yellowish green or olivaceous glaze. (Pl. IV.) The fragment of this remarkable crock, however, is too small to give an idea of the complete vessel, which must be left to the imagination, after comparison with the very few examples, not of similar design, but of the same class known, for this is but the *fourth* placed on record. The first is illustrated in the fourth volume of the *Archæological Journal,* p. 79, and though evidently of a ruder make, and possibly of somewhat earlier date, it yet possesses some characteristics common to both; and I quote the

199

No. of Objects.
199

description given by the owner, Mr. William Figg of Lewes :—"In the excavation for the approach of the "southern mouth of the tunnel on the Keymer branch "of the London, Brighton and South Coast Railway at "Lewes, this singular piece of pottery was found in "the early part of the year 1846. It is partly mu- "tilated, but the form is so unusual as to excite "great curiosity, especially as specimens of mediæval "pottery are supposed to be of very rare occurrence. "It is in the form of a mounted knight; the work- "manship is very rude, but there are certain details, "such as the long pointed toes and prych spurs, which "may assist us in ascertaining its probable date. By "some persons, to whose inspection it has been sub- "mitted, the period of its fabrication has been supposed "to be as early as the reign of Henry II. The length "of this singular vessel is $10\frac{1}{2}$ in. and its height 10 in., "but if the head of the horse had not been broken, "the extreme length would probably have been as "much as 13 or 14 in. The material is coarse clay, "burned, the upper parts being glazed of a dark green- "ish colour, very similar to that on some of the plain "paving tiles found in the ruins of Lewes Priory during "the excavations made for the railway in 1845. There "can be little doubt that this grotesque vessel was "intended to contain liquor, and the handle which "passes from the back of the knight to the horse's "rump, was evidently intended for pouring out the "contents; whilst a circular aperture at the lower end "of the handle afforded the means of filling the vessel."

Other two have been noticed, but only one of these is engraved, viz.,—in the *Trans. of the Hist. Soc.*, vol. X, p. 388. Like the example before us, a single fragment is all that remains, the *probable* outline of the complete

199

No. of Objects.
199

figure being pourtrayed by dotted lines, which in the case of the ancient Meols specimen would be an utter impracticability. It is of far ruder execution than either the Lewes or Meols crock, and consists of the central portion of an equestrian group, the head of the man and the hind quarters of the horse being wanting. It was dug up in the churchyard of Winwick, in Lancashire, and is now in the Warrington museum. Our associate, Dr. Kendrick, of that town, exhibited in London at the same time (3rd Dec., 1857) the *handle* of what he considered a similar vessel, dug up in his own garden; but having met with several handles upon the Cheshire shore, belonging, as I conceive, to crocks of more ordinary ware, this point requires confirmation. Mr. H. Syer Cuming exhibited the remains of another equestrian crock, including the breast of the horse, with the lower part of the leg of its rider, at a meeting of the Archæological Association, in June, 1856. This was exhumed from beneath the foundations of the *Old King's Arms*, Leadenhall Street, London, on the 7th Sept. of that year, and is engraved—fig. 2, on pl. xx. It is thus described by Mr. Syer Cuming:—"When "perfect it represented a figure encased in mascled "armour, the body covered with a tunic, and the heel "accoutred with a sessile 'prych spur.' The lower "part of the shaft of the gonfanon, which rested on the "right foot of the knight, is still apparent. The chest "of the horse would seem to be protected with a breast-"plate, or sort of piciere, consisting of several large "annular bosses, with a festoon of oval plates beneath "them. The date of this rare fragment is certainly "not later than the first half of the twelfth century, "and may be safely assigned to the reign of Henry I.

199

"The late Mr. Crofton Croker possessed some portions

No. of Objects.
199

" of this vessel, and often promised to give them to me, " a promise which, I much regret to add, was never " fulfilled."

The above-named are all of this class the discoveries of which have been made public. One and all are referred by antiquaries to the twelfth century, indeed to the earlier portion of it. Towards its close, vessels cast in metal (latten) succeeded, of similar designs and often good execution. On these the rider is invariably a knight, a restriction which may not be found to apply to the examples in terra cotta; but the latter, equally with the former, were intended for use as well as possible ornament, viz., as *ewers* or vessels for the reception of some kind of liquid. They were, however, replenished in different modes, some through the open topped *helmet* of the knight; whilst one, in the possession of Dr. Kendrick, is furnished with a hollow in the top of the forehead of the horse, in this respect resembling our terra cotta examples, with the exception of being triangular in form, in place of circular, as in the crock before you, and in being also furnished with a hinged lid. One common feature in these remains is the *spur*, some having the "prych," others the *rowel*, and as the latter was only substituted for the former towards the close of the twelfth century, and did not become general until the succeeding one, the date of these curious receptacles may safely be appropriated. Swords, lances and body-armour of various descriptions are also confirmed in the accoutrements, whilst the horses have ornamental bridles, breast and girth-straps, and usually saddles very highly projecting both before and behind. It is possibly the lengthened frontal extremity of one of these which appears upon our fragment within an arch of the upper

199

No. of Objects.

199 bridle, a lower one extending to the hands of the rider, as with the Lewes crock. It is difficult to determine whether the *vandyked* ornamentations between the various divisions of the bridle are intended to pourtray the design upon a leather collar, *piciere* or breast-plate on the chest of the animal, or merely a fanciful filling up, as nothing resembling it appears upon the necks of the *bronze* receptacles mentioned, save a little ornamented medallion or stud (?) upon one specimen, an engraving of which appears in the *Mirror*, pl. 29, fig. 3, vol. ix, p. 288, and which is stated to be about 20 in. long, and to weigh nearly 12lbs. There seems every probability that the terra cotta example from the Cheshire shore must originally have been at least 15 in. long and 12 in. high, and it probably held a quart.

It is note-worthy that three out of the four known equestrian crocks found should have occurred in this part of the country. The fact would lead to the supposition of their fabrication at some neighbouring early English pottery, but such manufactories are little known, and the nearest of which we have any account is in the neighbourhood of Derby, where vast heaps of broken refuse ware remain, and it is very desirable these should be carefully examined, more than has yet been the case, by Mr. Ll. Jewitt, with a view of detecting remains of peculiar and unique descriptions of ware like that here dilated upon.

36 Fragments of red-coloured ware, often slate-coloured in the middle, a few with olivaceous glaze, 12-15th century; one of singular form has an orifice through the bottom, while other apertures seem to have been carried through lateral branches or handles of the crock.

27 Fragments of ash or cream-coloured ware, with yellow

No. of Objects.
262

or green glaze ; two have ornamental beaded bands, 12-15th century.

Animal Remains.—The mediæval stratum has yielded a few remains of horses, oxen, dogs and sheep as usual. A fine specimen of the antlers of a species of *Red Deer* was found near the end of the year, much nearer New Brighton than Hoylake, and nearly a mile to the N.E. of Leasowe Castle. It is now in the possession of Mr. Webster, of Overchurch Hill. The age of the animal when killed is presumed to be nine years, as each antler is eight-branched, and has measured 40 in. in length, but one is somewhat fractured at the extremity. The horns being comparatively perfect, and still united to the upper portion of the skull, the whole forms an ornamental object of considerable interest for the hall. Between the eye sockets is a breadth of 6 inches, and as the forehead between the roots of the antlers measures $3\frac{1}{2}$ inches, the extent from tip to tip across the forehead gives 7 feet.

Several fragments of other antlers with vertebral bones have occurred towards the close of last year ; but upon its latest day a very unexpected anatomical relic was brought to light. Stanley Dean, of Wallasey, a man fond of a stroll upon this beach, and practised in "the "art of seeing," detected within some 600 yards of the embankment and upon the edge of a "slack" or tide-worn gut, about 100 feet below average of high-water mark, a portion of a large bone ; and the greater part being still imbedded in dark sandy soil, he at once proceeded to the ganger's cottage for the loan of a spade. Careful extraction disclosed the hinder part of the skull of a northern species of whale, but very sapiently asserted by some Liverpool gentleman, who shortly had an opportunity of inspecting it, to be *the*

262

No. of Objects.
262

breast-bone of an elephant! It comprises the *brain-pan* (very small) possessing an extraordinarily thick osseous process around the spinal orifice, where the *atlas* or first vertebral section would attach, together with the lateral or cheek bones in a much more advanced state of decay; those of the proboscis being wanting, probably through abrasion on the beach before final deposition where found. The dimensions of this bony structure, which before drying weighed about three-quarters of hundred-weight, are—height, 1½ feet; breadth, 2 feet; length, 2 feet; while from the centre of the spinal orifice to the extremity of outer cheek bone is likewise an extent of 2 feet, proving the mammal to have either been an immature specimen of a large species, or a mature one of a smaller tribe—possibly the Greenland, of which a specimen was lately stranded upon the shore near Speke. From the state and appearance of the skull, it must have been buried in a sandy bottom of the shore, together with the fine antlers just described, some few hundred years ago, being located at the base of the dissolved sandy stratum C, (overlying the upperwood or peat, Sections I and II, F), in the *upper* portion of which the so-called "*skeleton of a Pre-historic Man of Cheshire*" was exhumed in February, 1864, of which further corrected particulars have already been published by the writer. It had evidently been interred by men from a still higher and consequently more recent level. For further information about the whale's skull, I have the pleasure of referring to Mr. T. J. Moore's description.* It would appear to be the third osseous remain of its class recorded as found in a *fossil state* upon our shores. In Leigh's *Natural History of Lancashire,*

262

* To be published in vol. vii, N.S.

No. of Objects.

262 *Cheshire and the Peak in Derbyshire*, published in 1700, a "cutt" appears on plate 6, fig. 1, of one of the intermediate bones from the vertebra of a young whale found upon Hilbre Island. The locality of the second find was so near that of the third (the skull), as to suggest that both may have belonged to one and the same individual, although, probably from adventitious circumstances of deposition, the *humerus*, for such it was, had become partially petrified. It was found by some men from Liscard, who were collecting boulders, and thinking this to be one, struck it with a mall, when its bony origin appearing, one of the halves into which it had split was taken home for curiosity's sake, and subsequently was exhibited by Mr. Nisbet, at a meeting of the Literary and Philosophical Society. The remaining moiety, in spite of many a careful search, has hitherto eluded observation; and the fact is amply illustrative of the great shifting of the sands through the combined effect of certain winds and tides, and the necessity for caution in denying the existence of objects or remains because not to be found at *supposed* favourable seasons.

Later English.

1 Silver.—*Shilling* of James I.

1 Iron.—*Horse Shoe*, 4½ inches long by 4 inches broad, seventeenth century.

1 *Spur*, of slender make, 5½ inches long, with rowel.

1 *Ring*, 2½ inches diameter, ⅛ inch thick.

150 Terra Cotta.—Heads of Clay Pipes, found in August, 1864, at the spot known as "The King's Gap," Hoylake (township of Little Meols) by workmen in the employ of Mr. Evans, builder, whilst sinking for foun-

416

No. of Objects.

416 dations of new houses, since built between the recently erected Upper Lighthouse and the shore. The writer being out of health at the time, the discovery did not come to his knowledge until some months subsequently, when all had been given away and become dispersed beyond recovery. They were described as numerous enough to fill a "skip," so that the estimated number given will be within compass. But few appear to have been noticed as possessing letters, *i.e.*, initials of their potters, but one retained by the contractor contained the name in two lines; very few such occur here. All, from the description, seem to have belonged to the latter half of the seventeenth century, and mostly to possess small pointed *spurs*, in this respect contrasting strongly with those of the commencement of that century, when such were purposely made broad as "rests" to sustain the bowl in an upright position when the pipe was laid upon the table or bench. This find was doubtlessly the refuse from a canteen, attached to the camp of William of Orange, located close by, ere his troops embarked for Ireland, 12th June, 1689. Tradition makes the King pass this way to the shore, hence *The King's Gap*.

36 Heads of Clay Pipes of various forms, and dating from 16th to 18th century. Twelve of them bear the name of the potter, more or less contracted, and generally merely initials; these occur mostly upon the end of the spur, although not unfrequently upon the side of the bowl within some little ornament. The following have been deciphered :— BEN / LEGG, ED. / R : : :, C. R., G. A., I. B., I. D., I. L., R. A., R. S., S. R. One of this lot—*temp.* Jas. II—was detected in a garden bed, in Church

—— Street, Egremont, within a stone's throw of the writer's

No. of Objects.

452 residence ; he found one of similar date upon the river beach nearly opposite, a few years ago, which proved to be much abraded by the action of the tide among the pebbles. The others are mostly from Great Meols.

452 Total number of objects of archæological interest, secured in the space of three years. on or near the sea beach of Cheshire, irrespective of animal remains.

The foregoing archæological matter having swelled into greater proportions than had been anticipated, a division of the paper would seem to be desirable, and the Natural History section will subsequently appear as Part II.

NOTABILIA OF THE ARCHÆOLOGY AND NATURAL HISTORY OF THE MERSEY DISTRICT DURING THREE YEARS, 1863-4-5.

Compiled by Henry Ecroyd Smith.

(Read 3rd May, 1866.)

Part II.—NATURAL HISTORY.

[It having been found necessary to effect some abridgement of the original design of this paper, the Natural History report will be confined to the more generally interesting divisions of our Zoology and to Botany. The *Naturalists' Scrap Book* has supplied numerous notices—to the more important of which, as also in cases of necessary abridgement, exact reference is given. The contributions are from numerous sources; and the writer of each notice, in giving his own story, is alone responsible for his facts and opinions.]

ZOOLOGY.

Miscellaneous.

Otter. (*Lutra Vulgaris*). A very fine male otter was captured this morning in Bromborough Pool, just above Price's candle-works. He was seen on the opposite bank, and after a sharp chase of two hours, in boats, was stunned by a blow with a stone and captured alive, as he still remains, but is, I fear, injured internally, as he appears very dull and sluggish this afternoon. He was first seen near the mouth of the pool, consequently in fully salt water, and hence I suppose him to have strayed up from the Mersey. A partly grown otter was seen by a colleague some two or three years ago in the small stream which runs into the pool from Raby mere, but was not seen or heard of afterwards. There seems no reason to suppose this to be the same individual, as it is scarcely probable that such an animal could entirely escape

notice, even if it could find subsistence in so small a rivulet.—*W. H. Hatcher*, 15*th Sept.*, 1863, "Scrap Book," second series, p. 105.

Johnston's Hump-backed Whale. (*Megaptera Longimana*, Rudolphi.) On Friday, July 17th, 1863, a large specimen of this whale was observed by some fishermen stranded upon a sandbank at Speke. It was lying on its back, a position very favourable for examination of the under surface, but hiding all view of the blowers. I believe it to be the species so named in Dr. Gray's catalogue of the Cetacea in the British Museum, 1850, p. 26, and would appear, up to that date, to have been only once observed on the British coast, viz., at Newcastle, by Dr. Johnston, and it is remarkable that both specimens were females. The dimensions are—

	Ft.	In.
Total length in a straight line from snout to cleft of tail	31	4
Length of gape, about	8	0
From snout to the eye	8	0
Length of eye	0	3
From the snout to commencement of pectoral fin	11	0
Length of pectoral fin	10	0
Extreme width of tail at the tips	11	0
From snout to commencement of dorsal fin, or rather hump	18	0
Length of dorsal fin	3	3
From snout to cloaca	21	0

A quantity of shrimps are asserted by the butchers to have been found in the stomach.

The genus *Megaptera* is distinguished from the *Balæna*, or true whalebone whale, by the presence of a dorsal fin or hump, by the belly being plated or deeply grooved, and the plates of baleen being broad and short, which characters agree with this specimen. The longest plate of baleen measures about 2 feet long by $5\frac{1}{2}$ inches at the base, and they were so close together that I counted thirty-eight in the length of a foot. The creature was quite black except the belly, which was mottled and streaked

with white, and the pectoral fins were milk-white, except a black blotch here and there. The carcase was purchased by Mr. Thomas Brock, who has most liberally presented the skeleton to the museum.—*Thomas J. Moore*, "Scrap Book," second series, p. 103-5.*

Remains of former Cetacean visitors. On 31st December, 1865, Stanley Dean, a labourer of Wallasey, found upon the Leasowe shore and about 600 yards N.E. of the embankment, the skull of a small species of whale. It measures in height 1½ foot, in breadth and in length about 2 feet, and the same from the centre of the spinal orifice to the extremity of the outer cheek bone. The stratum in which it lay is composed of sand and silt, overlying the upper bed formed by ancient arboreal growth, which is divided from the lower or primeval one by a bed of blue clay. The sand has certainly been deposited on the surface of the upper bed in historic times (although it was in its higher reach that the celebrated "Prehistoric man of Cheshire" appeared,) and though it might safely be surmised that the skull had here found a resting place within a few hundred years, the probabilities are that the skeleton of which it formed a part had been stranded upon one of the outer sandbanks at an earlier period. Another single cetacean bone, a portion of a humerus and likewise belonging to a small species, was found by some men collecting boulders in the same locality a few winters ago; it was at first supposed to be stone and proved partially petrified; on being split longitudinally the osseous structure was apparent and one moiety was carried home as a curiosity; the other was in vain sought for, having doubtlessly

* Dr. Gray, in his recently published "Catalogue of Seals and Whales in the "British Museum" (1866), records this specimen as a previously unrecognized variety of *Megaptera longimana*, which he calls "var. 2, *Moorei*," founded upon peculiarities in the cervical vertebræ: see *loc. cit.* pp. 120, 122.

been washed into some hollow or "slack" and covered by the ever-shifting sands. A third old bone is recorded and engraved in Leigh's "Natural History of Lanca-"shire and Cheshire and the Peak in Derbyshire," Bk. I, p. 185; it is the epiphysis or, as yet, unossified end of a vertebræ of a whale, but the size is not given. It was found near Hilbre Island, four miles to the westward of the above-mentioned locality, and nearly two centuries ago, Dr. Leigh's work being published in 1700.—*H. E. S.*

White-beaked, Bottle-nose Porpoise. (*Lagenorhynchus Albirostris.*) On the 29th December last, Mr. Barnett of Hilbre observed at day break, on the rocks of Little Hilbre, a stranded porpoise, which he immediately secured and handed over to me for the museum. It was still living when I saw it and survived some time longer, not dying until it had been eight hours out of water. When first caught and when dying it struggled violently, but during long intervals lay quiet with only occasional convulsive movements. It was warm to the touch, breathed spasmodically, and a slight moisture oozed from the eyes. At the time of capture, about quarter ebb, a fresh wind was blowing from the W.S.W. Several other porpoises were observed a few days previously. The specimen is a male, measuring nine feet in extreme length. Colour black, with an uncertain tinge of bluish green, except a greyish streak across the ribs and another on either side of the dorsal ridge from the fluke to the tail; beak, throat and belly white. It proves to be the *Lagenorhynchus albirostris* figured and described in the "Zoology of the Erebus and Terror." This species has once before been captured on the British coast, namely, at Great Yarmouth, in October, 1845, and was recorded and figured in the Annals and Magazine of Nat. History for 1846, vol. xvii, p. 21, pl. 2, by Mr. Brightwell, under

name *Delphinus Tursio*, with which he supposed it to be identical.—*Thos. J. Moore*, "Scrap Book," p. 3.

Common Porpoise. (*Phocœna Communis.*) A very fine young specimen of this porpoise was taken, but unfortunately knocked on the head and killed, by some fishermen, on the 6th of August, 1864, near the Crosby Lightship. It measured 30 inches in length, from tip of snout to cleft of tail, and weighed 22lbs.—*T. J. Moore.*

Sturgeon. (*Acipenser Sturio.*) I observed a specimen stranded upon the shore at Hale, on 29th July, 1863.—*C. S. Gregson*, "Scrap Book," p. 93.

Lump Sucker. (*Cyclopterus Lumpus.*) On the 23rd February, 1863, a living specimen of this fish was taken in Bootle bay and presented to the museum. On the 7th of March a dead specimen was brought from Hoylake; on the 6th April another was taken near Liverpool, and a day or two after I saw a very large one, minus the tail, in the fish market. The occurrence of four specimens in little more than as many weeks is worth recording.—*Thos. J. Moore*, "Scrap Book," p. 30. On the 5th of March, 1864, a specimen of this fish was brought to me, stated to have been taken at Garston. On the 19th another example was presented to the museum by Mr. Walker of Hoylake. The latter was taken by some fishermen near Carnarvon. These are the only specimens I have seen during the past winter.—*Thos. J. Moore, Ibid.*, p. 207. Another living specimen of the Lump Sucker, taken at Tranmere, was brought to me last week and lived seven days in confinement. April, 1867. *T. J. Moore.*

Gemmeous Dragonet. (*Callionymus Lyra.*) Mr. W. H. Hatcher sent me, on 13th May, 1864, a very fair specimen of this gaily-coloured fish, with a note stating that it been taken in the Mersey, in a shrimp net. The species

is not uncommon beyond the district, but I do not remember to have seen one from the river before the occurrence of this specimen. The colours, blue and yellow, are greatly intermixed, and the first spine of the first dorsal is nearly as long as the fish itself in some specimens. They sometimes measure as much as ten inches in length.—*Thos. J. Moore, Ibid.*, p. 234.

Short Sun Fish. (*Orthagoriscus Mola.*) In July, 1864, a fine specimen of this remarkable fish was captured, I believe, not far from Southport, and no instance being recorded in the "Fauna of Liverpool" of its occurrence, the present may fairly be considered its first appearance within our district. In length it measured 3ft. 6 in., and from tip of dorsal to tip of anal fin 4 ft. 9 in., the dorsal fin being 18 inches in length, the body 22 inches in depth, and the anal fin 17 inches in length. Under the pectoral fins and in other protected parts the body was of a bright pewtery, not to say silvery, colour. This was probably more or less the colour of the whole body when fresh, but when first seen by me it had been dead three or four days, and so appeared only in the above places, the other parts being of a dull brownish hue. I was struck with the extreme laxity of the dorsal and anal fins at their junction with the body.—*T. J. Moore, Ibid.*, third series, p. 50.

Angel Fish. (*Squatina Angelus.*) A very fine specimen of this fish was brought to me and purchased 5th August, 1864. It was taken near the Bell Buoy by a fishing boat. Mr. Byerley, in the "Fauna of Liverpool," mentions only one example, which was thrown ashore after a storm; this he gives on the excellent authority of Mr. Price. Our specimen is of large size, measuring 4 feet 1½ inch in total length. The eyes are peculiar, having lids coloured like the rest of the back, the eyes

themselves being being only visible through very narrow slits, as it were; or as Couch puts it in his *History of the Fishes of the British Islands,* "eyes small, separate "on the top of the head, all but the pupil covered with "the common skin."—*Thos. J. Moore, Ibid.,* p. 50.

ORNITHOLOGY AND OOLOGY.

From its peculiar geographical position, our district is visited by several species of sea-birds, of scarce occurrence on some parts of the western shore of Britain; but on the other hand, our ancient meres being much reduced in size, these and our ponds and "pits" (originally dug to prove the quality of the marl) are too small to attract many of the water-fowl which resort in great numbers to the meres and fens of the eastern counties. The land-birds are more regular in their habits and appearance, and yet the subjoined notices show facts and features, some unrecorded and others published but little known, of considerable interest. To Mr. C. S. Gregson we are indebted for records of his truly marvellous successes among the feathered tribes. Where the local names differ from those of general acceptation they will be found appended.

Rare Visitors.

Sea Eagle. (*Falco Albicilla.*) I have just seen a fine young specimen, shot on Blundell sands, about seven miles from the Exchange, some time ago, and which weighed 11½lbs. in the flesh.—*C. S. Gregson*, 20th July, 1864.

Iceland Falcon. (*F. Islandicus.*) A splendid old bird of this beautiful species flew on board a vessel coming into port, and was captured by one of the crew who skinned it. It is now in my collection.—*Ibid.*

Osprey. (*F. Haliæetus.*) Fishing Hawk. A fine male specimen was pursued and repeatedly shot at over Martin Mere drains, but was not secured ere reaching the river

Ribble below Preston. It was presented to me by Mr. Hodgkinson.—*C. S. Gregson.*

Merlin. (*F. Æsalon.*) A fine old female I shot at Formby, October, 1863; a young male bird earlier in the same year, and one since.—*Ibid.*

Hobby. (*F. Subbuteo.*) In 1865 I was shewn a fine male, shot on Cuerdley marsh.—*Ibid.*

Rough Legged Buzzard. (*F. Lagopus.*) On the 24th November, 1865, a specimen of this bird was obtained in a farmyard between Kirby and Appleton, in Cheshire, where it had ventured to join the poultry at feeding time.—*Jos. Leyland.*

Buzzard. (*F. Buteo.*) In September, 1865, two specimens were reported to me as "Great Eagles," repeatedly seen near Neston in Cheshire. Believing they would make for the Welsh mountains I set off in search of them, and in three days was back with a beautiful buzzard, the plumage of which was uninjured.—*C. S. Gregson.*

Little Owl. (*Strix Nudipes, Milner.*) Bare-toed Owl. A few years ago I saw a fine specimen of this beautiful bird in the Bath wood, Ormskirk. It was perched on a dead stump near the ground, and seemed quite regardless of my approach, which was accidental. It was broad day-light in the summer time, and the little creature seemed spent or stupefied, whether wearied with long flight or in that drowsy state so common to owls in the day-time I cannot say. I could have taken it with the hand and am certain of its identity.—*Thos. Williams.* [The first recorded occurrence of this interesting species in our district.—*H. E. S.*]

Nightingale. (*Philomela Luscinia.*) Considerable discussion took place in the local periodicals respecting the veritable appearance of this favourite songster of the

south, in Birkenhead park, in the month of May, 1863. Though unable to gratify my senses by seeing, hearing and identifying the bird, others in whose ornithological judgment I repose great confidence, were more fortunate, and I confidently place this record of *the fact*. Other gentlemen, though not ornithologists, having lived in the south of England and there become quite familiar with the species, give clear testimony of having both *seen and heard* this unusual visitor, which, frightened away at length by the rush of visitors to the neighbourhood of its favourite perch, was *succeeded by a boy* of rare vocal power of imitation, who is said to have been "subsidised" for the performance by the neighbouring publicans, for very obvious purposes. The imposture served to confirm many in the erroneous conclusion that Philomela herself had never visited the place.—*H. E. S.*

Starling. (*Sturnus Vulgaris* var. *Alba.*) I have just set up a beautiful variety of the Starling, shot at Horton in Cheshire. It is a perfectly white bird on the body, but slightly tinged with cream-colour about the tail.—*Joseph Leyland.*

White Wagtail. (*Motacilla Alba.*) This little-known bird I have shot on Bidston hill. It may always be known by its bluish lead-coloured back, but the characters given in books of its cheek marks are unreliable.—*C. S. Gregson.*

Wood-lark. (*Alauda Arborea.*) Some years ago this was not a scarce bird near Prescot. Recently, I have only known one specimen taken in our district; it was caught in a "grin" at Formby, in January, 1865, and is now in my collection.—*Ibid.*

Bramling. (*Fringilla Montifringilla.*) This northern bird appeared in great numbers in the winters of 1864 and 1865. I got fifteen at one shot. They seemed to pass

on from one farmstead to another, going inland, and could rarely be found for two days in one place on the coast.—*Ibid.*

Siskin. (*F. Spinus.*) The winter of 1863-4 produced me a single specimen, shot whilst feeding on elder trees at Kirkby.—*Ibid.*

Bohemian Waxwing. (*Bombycilla Garrula.*) Waxen Chatterer. A small flock appeared in the township of Feanhead, near Warrington, December, 1863, having alighted upon a low tree in a garden.—*W. Dixon, Warrington.* A male specimen was shot at Morton, Cheshire, February, 1864, being one of two seen.—*Jos. Leyland.* A male bird was secured in the grounds of H. E. Robson, Esq., Liscard Vale, near New Brighton, 23rd February, 1864, whilst feeding upon berries of a dog-rose, and has been well preserved.—*T. Binns Robson.* The last-named was in all probability the individual which escaped at Morton a few days previously; their occurrence is the first recorded in the lower Mersey district, but about and above Warrington I am assured the bird has not unfrequently been noticed in early or mid winter. It is, however, only an occasional visitor on the western side of our island, appearing in more numerous flocks along the eastern shores on its way to the continent, there to pass the remainder of the season.—*H. E. S.* Three specimens shot near Stanley.—*C. S. Gregson.*

Snow Bunting. (*Plectrophanes Nivalis.*) Snow flake. A specimen of this northern bird was captured alive near Liverpool and exhibited for sale in Manchester Street, whence it was sent to the Zoological Gardens, Regent's Park, a few days ago.—23rd December, 1863.—*Thos. J. Moore.* Only visits us in very hard winters, and all are young birds of the year, without any white upon them.—*C. S. Gregson.*

Turtle Dove. (*Columba Turtur.*) A pair alighted upon a rail at the western corner of Mr. North's grounds, near New Brighton and close to the beach, in June or July, 1863.—*H. E. S.*

Knot. (*Tringa Canutus.*) Salt marshes, Dee side.—*Wm. Fry*, "Scrap Book," 1st series, p. 39.

Curlew Sandpiper. (*Tringa Subarquata.*) One specimen, in April, 1865, fell to my gun, but in 1864 I saw several at one of our local taxidermists' for preservation, all in winter plumage.—*C. S. Gregson.*

Sanderling. (*Calidris Arenaria.*) Seen singly or in twos and threes on the coast where the Dunlins feed. During the last few years I have shot about two dozen specimens, thirteen of which, in spring, summer, autumn and winter plumage, are now in my collection.—*Ibid.*

Turnstone. (*Tringa Interpres.*) This once frequent visitor to our sea beaches is now becoming rare.—*H. E. S.* I shot a few specimens of this now rare visitor in September and October of 1864 and 1865; they were young birds.—*C. S. Gregson.*

Purple Sandpiper. (*Tringa Maritima.*) Rock Sandpiper. A fine specimen, in winter plumage, shot between Crosby and the Alt, January, 1864.—*Ibid.*

Spotted Sandpiper. (*Totanus Macularius.*) Spotted Snipe. Edwin Lord, of Warrington, shot two specimens on the Mersey, below that town, in May, 1863, one of which I possess. In 1865 he again saw this species on the river, but did not get a shot. It has been said the bird was never procured in England, but I have shot it more than once on our northern rivers.—*Ibid.*

Sand Grouse. (*Syrrhaptes Paradoxus.*) Pallas's Sand-grouse. This interesting and very curious species, but lately added to our British Fauna and whose occurrence in various parts of the island has been recorded in the

Zoologist, has visited several localities in this neighbourhood, viz., Upton, near Chester, *John Price;* Hoylake, June, 1863, *T. J. Moore*; near Leasowe Castle, November, 1863, *Ibid*; a male, shot near Warrington, Christmas day, 1863, *C. S. Gregson.*

Ruff. (*Machetes Pugnax.*) I obtain a young reeve or two every season on the swampy lands on our coast.—*Ibid.* One shot on salt marshes, Dee side, by *Mr. Fry.* "Scrap Book," 1st series, p. 39.

Spotted Gallinule. (*Crex Porzana.*) Spotted Crake. This rare bird in our neighbourhood has visited us freely this season. Already six specimens have been brought to me in the flesh, all killed within our district. It is ten years since the bird occurred so freely before. *Joseph Leyland*, 23rd November, 1863. "Scrap Book," second series, p. 138.

Spotted Redshank. (*Totanus Fuscus.*) I shot a single specimen of this rare bird at the mouth of the Alt, October, 1864.—*C. S. Gregson.*

Greenshank. (*T. Glottis.*) Formerly not scarce among redshanks, being easily known from them when flying, by its different note; four specimens have fallen to my gun on our shores since 1863.—*Ibid.*

Dotterell. (*Charadius Morinellus.*) In May, 1863, I shot two out of five which were flying over the mouth of the Alt, inland.—*Ibid.*

Black-tailed Godwit. (*Limosa molanura.*) Red or Lesser G. As rare here as it is plentiful on the east coast, being here replaced by the Bar-tailed G. I have only met with one specimen on these shores.—*Ibid.*

Great Snipe. (*Scolopax Major.*) In the winter of 1863-4, I saw a fine bird of this species mangled, at one of our local bird stuffers' shops; it was said to have been shot at Rufford, but was not for sale ! !—*Ibid.*

Grey Phalarope. (*Phalaropus Platyrhynchus.*) Two specimens shot at Crosby in 1863, and more recently one at Bidston.—*Ibid.*

Storm Petrel. (*Thalassidroma Pelagica.*) Mother Cary's Chicken. My son, being engaged in preparing for a skeleton the bones of the whale recently captured at Speke, upon looking across the New Dock saw a strange bird flying; it approached so close to him that he discovered it to be a specimen of that delicate little bird the storm petrel.—*R. Reynolds.* "Scrap Book," p. 133. Dec. 1863. Some time ago, while walking along Ullet Road, Aigburth, after very stormy weather, I saw something blowing about in the dust, and on picking it up, found a storm petrel quite dead and covered with dust. On smoothing the feathers, I found that the bird was reduced almost to a skeleton; the skin and feathers were much worn from the breast and one wing was broken. The web feet and legs were quite perfect as were the feathers on the back and tail. Although it must have been dead some time, the body was very oily.—*James Hance, Jun.* "Scrap "Book," third series, p. 218.

White Spoonbill. (*Platalea Leucorodia.*) A specimen was shot at Burton, Cheshire, 1864.—*Jos. Leyland.*

Fork-tailed Petrel. (*Thalassidroma Leachii.*) I have a poor specimen of this rare bird, shot by Sergeant Johnson at Old Swan.—*C. S. Gregson.*

Manx Shearwater. (*Puffinus Anglorum.*)

Puffin. (*Mormon Fratercula.*)

Little Auk. (*Uria Alle.*)

Several specimens of these birds were found exhausted on the Formby shore in the winter of 1864-5.—*Ibid.*

Common Skua. (*Lestris Catarractes.*) I saw a fine specimen caught in a net set to take "knots" at the mouth of the Alt in 1864.—*Ibid.*

Sclavonian Grebe. (*Podiceps Cornutus.*) I shot a young bird of the year in February, 1864, on a little stream at the mouth of the Alt.—*C. S. Gregson.*

Sandwich Tern. (*Sterna Cantiaca.*)

Arctic T. (*S. Arctica.*)

Lesser T. (*S. Minuta.*)

Specimens of each of these "sea swallows" have fallen to my gun upon the Crosby shore.—*Ibid.*

Canada Goose. (*Anser Canadensis.*) Mr. Sneads and I have each obtained a specimen of this species; mine was shot early in the morning, and I stalked a number of them for several days.—*Ibid.*

Shieldrake and Shoveller. (*Anas Tadorna and Clypeata.*) Of these two beautiful ducks I generally get one or more every year, the first at Hilbre and the second about the mouth of the Alt. To get a shot at a Shieldrake at Hilbre requires all the attributes of a good sportsman.—*Ibid.*

Gadwall. (*A. Strepera.*) One fine and one young bird are in my collection, both shot near the Altcar shooting ground, April, 1865. This is an exceedingly rare bird within our district, as it prefers fresh inland waters.—*Ibid.*

Pintail. (*A. Acutua.*) Sometimes taken in the decoy at Hale. I have three of my own shooting at the mouth of the Alt.—*Ibid.*

Gargany. (*A. Querquedula.*) I possess a single male, shot by a fowler at Rufford, April, 1864, obtained by purchase.—*Ibid.*

Velvet Scoter. (*A. Fusca.*) I have only seen three specimens of this fine duck in our district; one was picked up quite exhausted on the shore at Moorhouse marsh, the others both fell from the effects of a single No. 1 shot, each from my gun, one going through the head of the first bird, the other penetrated to the region of the kid-

neys from behind; both lay dead on the sand at once—such a sight as I never saw before and may never see again. Both are now in my collection.—*C. S. Gregson.*

Scarce Breeders.

Sparrow Hawk and Kestrel. (*Falco Nisus and Tinnunculus.*) Almost the only hawks that incubate in the lower portion of the district, preferring the large ivy-mantled trunks only to be met with in the older woods. I have found a nest of the former, after several years' failing, in a wood within a couple of miles from the sea shore, early in May, 1865. An old nest of a wood pigeon, subsequently tenanted by a pair of jays or magpies, had been furbished up, and five beautifully marked and richly coloured eggs were ready for incubation.—*H. E. S.*

Long Eared Owl. (*Strix Otus.*) Horned Owl. I had the good fortune to find a nest of this bird in May, 1865, and within a few hundred yards of that just mentioned; but in place of the desiderated eggs, it was found to contain five owlets, an unusual number I believe, four being the recognised complement. A vast number of castings lay at the feet of neighbouring trees, a large proportion of which contained the skull of a young house sparrow.—*H. E. S.* I have a specimen in my aviary, procured, when a fine young bird, from a nest at Knowsley.—*C. S. Gregson.*

Red Backed Shrike. (*Lanius Collurio.*) An occasional breeder on both sides of the Mersey. I have eggs taken from a nest near Claughton in 1863.—*H. E. S.*

Ring Ouzel. (*Turdus Torquatus.*) Only *suspected* by Mr. Brockholes to breed near Bidston and Tranmere, a pair having been noticed in each of these localities. A nest was found between Bidston and Oxton heaths, May, 1863,

placed in a hedge separating gardens, at David Jones's farm. The eggs, two in number; were taken for me; but it was to be regretted, inasmuch as the birds forsook both nest and neighbourhood, where they had been observed for several seasons. Although the first recorded breeding in this part of the country, I find two nests of this species had previously been noticed by Mr. Alfred Gleave near Upton, only a mile distant; the last were probably the producton of one pair of birds.—*H. E. S.* I have taken a nest under Noctorum plantations in a bush on the edge of a pit, and have frequently shot the bird in the same neighbourhood within the last twenty years, though it is by no means a common one here.—*C. S. Gregson.*

Redstart. (*Sylvia Phœnicura.*) A nest found 17th April, 1863, not far from Oxton, in a hole in a bank by the side of a lane, about three and a half feet from the ground. Another was found 22nd April, behind the ivy on the wall bordering a wood at Bebington; it contained three eggs, and the bird was seen.—*E. Gleave.*

Grasshopper Warbler. (*S. Locustella.*) The nest of this shy little bird, though but rarely secured, may be of more frequent occurrence than is supposed. Mowers have the best chance of meeting with it, placed as it is almost invariably under or among tufts of thick grass in the open fields during May and June, and to which it has "runs" among the turf like those of field mice. A nest I obtained in 1864 near Liscard, contained six eggs, very richly zoned with red spots at the larger end.—*H. E. S.*

Reed Warbler. (*S. Arundinacea.*) Reed Wren. Mr. Brockholes, who had known of a nest among Sefton meadows, suspecting this bird to breed in the reedy ditches traversing those to the landward of Leasowe,

repeated searches have been made here by myself and others without success; but a young gentleman of the neighbourhood, Mr. Bewley of Poulton, was more fortunate in meeting with a nest early in June, 1865, suspended as usual between three or four reeds, and containing several eggs.—*H. E. S.*

Tree Sparrow. (*Fringilla Montana.*) This lively and beautiful little bird seems to be little known in the district, and is often confounded with the common house sparrow, which builds so commonly around here in trees. It may, however, be known at a glance; its *brown* head (not grey), small size, black chuck, broadest at the base of the under mandible (not spread out on the breast), and light collar, are characters which cannot be mistaken. It often breeds in the fork of, or in a hole in, old cherry trees in old orchards. The eggs are much smaller, and generally browner and more blotchy, than those of *F. Domestica;* the nest is not so slovenly, and the bird is more "cocket" and sprightly than its homely relative.*—*C. S. Gregson.*

Goldfinch. (*F. Carduelis.*) This is becoming a very scarce bird here, the high state of cultivation which has succeeded that of mediæval times, leaving no chance for its favourite food (thistle seed) to ripen. I took a nest in April, 1864, at Bidston, and set a specimen up, shot at Stanley.—*Ibid.*

Twite. (*F. Montium.*) Another of our little-known birds, which is abundant upon our mosses but rarely noticed. In May, 1864, I took five nests and eggs one afternoon for a friend who wished to know the egg and nest. It is known to our local bird catchers as the "*Manx Linnet,*" and may be recognised among linnets by its small

* I last spring found the nest of this species in a very different position, and presenting other peculiar features.—*Vide Liverpool Naturalists' Journal,* Sept., 1866, p. 64.—*H. E. S.*

yellow bill, and by the male having a pinky-red rump.—*C. S. Gregson.*

Lesser Whitethroat. (*Curruca Sylviella.*) Continues to nest, though very sparingly, in plantations near the upper part of old Wallasey Pool.—*H. E. S.* The bird may be met with at Storeton, Raby, and West Kirby.—*C. S. Gregson.*

Long Tailed Titmouse. (*Parus Caudatus.*) Bottle Tit, Long Tailed Mag, &c. A beautiful nest of this species I had the pleasure of securing in a wood near Bromborough, 22nd April, 1865. It was placed in a bush of commingled blackthorn and wild briar, but neither shrub was as yet in leaf; stranger still, this selected position was close to a pathway, occasioning the little domicile to be very conspicuous at the distance of at least a dozen yards. The male bird was perched somewhat higher in the bush, but occupied doubtlessly in communicating warnings to his mate. He did not fly until approached within a foot, quickly followed by the female from the interior, who yet contrived to leave several feathers across the orifice to hide it from the gaze of intruders. The admirable architecture of the domicile naturally proved a strong incentive for its uninjured removal, and, therefore, all the branches to which it was attached were carefully severed below and disentangled above; but unfortunately most of these proved to be *dead wood*, and broke before my prize could be conveyed from the thicket into the open; consequently a looseness has been engendered in the excellently compact structure, but the original beautifully oval form is fairly preserved. The materials employed prove to be chiefly mosses of various kinds interwoven with lichens, flattish pieces of the latter covering and protecting the exterior like the mascled armour of former ages.

The interior is composed of fine wool, lined with small feathers, a few larger ones being left handy for hiding the orifice as mentioned. The outline of the nest much resembles that of a lemonade bottle minus the neck, whence the usual appellation of this curious bird, Bottle Tit, and considering the small size of the architect, its domicile is large and long, but allowance must be made for the requirements of the tail, which, being fully half an inch longer than the rest of the body, absolutely necessitates a considerable elevation, as during incubation &c., the caudal appendage is turned upward, not projecting sideward, as Mr. Selby assumed when he ventured to assert—"a small hole is left on two opposite sides of "the nest, not only for ingress and egress, but also to pre-"vent the bird during incubation from being incommoded "by its long tail, *which then projects through one of the* "*orifices.*" Messrs. Bond, Newman, and others, very naturally demur to such a statement, which is not confirmed by naturalists of the districts where the bird breeds numerously, *i.e.*, the midland and southern counties. Its nesting in Yorkshire, Lancashire, and Cheshire is not frequent; and I believe the present is the first-recorded instance in our immediate neighbourhood, although the keeper at Bromborough informs me he has for some years met with a single nest in a season. The eggs in this instance were found to be the complement, or nine in number, and white, but minute reddish brown spots are occasionally visible upon the produce of this species.—*H. E. S.*

Golden Crested Regulus. (*Regulus Cristatus.*) Golden Crested Wren. Breeds exclusively in fir plantations, which here are confined to the higher sandstone uplands, where its nest was formerly of common occurrence; now it is becoming scarce in the Bidston and Stourton

plantations.—*H. E. S.* It visits us more numerously in the winter. During November and December, 1863, this bird assembled in great numbers in the plantations and shrubberies at Aigburth; those I shot were in very good condition.—*John Johnson.*

Night Jar. (*Caprimulgus Europæus.*) Night Hawk or Churr, Flying Toad. This interesting bird is, through wanton shooting, becoming scarce on our upland heaths and fir plantations, where, as now upon the more inland mosses of Lancashire and Cheshire, undisturbed by cultivation, it abounded. Its eggs are now rarely secured; and being deposited without any covering, are easily seen by depredators, human as well as canine.—*H. E. S.* In August, 1864, my son saw a night jar upon the roof of our house, 10, Brownlow Street, a rare instance of its visiting the centre of a large and populous town.—*R. Reynolds.*

Stock Dove. (*Columba Œnas.*) Breeds sparingly in rabbit burrows among the sandhills beyond the Hoylake race course, at Little Meols, and more frequently in those of the river bank between this village and Neston; likewise upon Caldy Hill, where it is known as the "Hill Pigeon," whilst at Little Meols, "Sand Pigeon" is the designation. The bird also occasionally is found, under the name of "Hill Pigeon" (from the sandhills), incubating in abandoned burrows between Formby and the shore. Near the Point of Air this species breeds numerously in similar positions.—*H. E. S.*

Rock Dove. (*C. Livia.*) Blue Rock Pigeon. A pair took possession of the entrance to an old rabbit burrow above the western sea cliff of Middle Hilbre in 1865, whence I procured an addled egg in July. This spot no doubt was selected in default of a sufficiently elevated crevice in the rock to insure protection; but that the species does

not wholly confine its nestings to holes in rocks and cliffs, is shewn by its breeding in the neighbourhood of the last-named, in the high clay bank near Daw Pool, and having two or more broods in a season. It is not unlikely, as has been suggested to me, by my friend Mr. Alex Cooke, that among these blue pigeons may be found some stragglers escaped from domestication, in which case a mixed breed may be the result.—*Ibid.*

Ringed Plover or Ringed Dotterel. (*Charadius Hiaticula.*) "Sand Lark," but more usually the "Tullet" of the Cheshire, and "Tew William" of the Formby shore, so denominated from its peculiar plaintive cry. It yet breeds sparingly on the Lancashire side of the estuary, but has long been scared from incubation at its old Cheshire haunts, unless possibly about Daw Pool.—*Ibid.*

Oyster Catcher. (*Hæmatopus Ostralagus.*) Probably breeds on the opposite (Flintshire) shore, but no longer upon the Cheshire side of the Mouth of Dee—although suspected by the country folk to lay both upon the banks around Hilbre and higher up the river—as careful enquiries have failed to acquaint me of any eggs or young having been secured of late years. During the winter season the bird is not infrequently met with on our shores; being a very wary one, it is however but seldom brought down by the sportsman.—*Ibid.*

Whimbrel. (*Numenius Phæopus.*) For some years I have known the whimbrel bred on our "mosses," and this year requested a friend to search carefully for its nest. He failed in finding it until after incubation, but killed the male and forwarded it to me. I believe this bird has a passage to its nest like some of the warblers, and have repeatedly seen the newly hatched young, but could never

discover the nest.—*C. S. Gregson*, June, 1863. "Scrap "Book," p. 54.

Common Snipe. (*Scolopax Gallinago.*) Breeds occasionally nearer some of our thickly-inhabited suburbs than is generally suspected. Mr. Gregson reports having found a nest in a field very near his house at Stanley. Its favourite incubatory haunt is, however, an elevated moorland.—*H. E. S.*

Coot. (*Fulica Atra.*) Bald Coot. A much commoner bird, the common water hen, is so generally thus designated by the rustics throughout this district, that numerous mistakes have arisen, and such appeared, during 1864, in the *Scrap Book*, one of the editors of which, however, asserted his possession of eggs obtained 27th April, near the Alt, and but eight miles from the Liverpool Exchange. His previous report of this bird being seen with its young in great plenty, sitting upon the broad ditches that flank the railway near Burscough station, must surely, however, apply to the water hen, which I find to breed freely there, where the coot is now rarely a breeder, being partial to more secluded situations.—*Ibid.*

Shieldrake. (*Anas Tadorna.*) A few pairs breed in burrows among the sandhills northward of Crosby. Along the whole range of those within the Cheshire shore, they likewise bred so lately as twenty years ago, and even now, as the breeding season approaches, two or three pairs appear among the hills, to be as surely frightened off in a day or two by the guns of the neighbouring cottagers. Near the Dee shore a few pairs incubate, in common with the stock dove, in burrows of the hills between Little Meols and the beach, and also in sandy portions of the bank towards Neston, and still more numerously on Caldy Hill, their eggs being invariably placed much

lower down the burrows than those of their neighbours the pigeons. The Shieldrake is the only species of duck which selects an under-ground location for incubatory purposes.—*H. E. S.*

Teal. (*Anas Cracca.*) In 1864, whilst examining some watery places on right bank of the Mersey near Speke, I found a fragment of a shell of an egg of this bird, with some indication of an abandoned nest. Mr. Brockholes records nests, probably of one pair of birds, among the ditches near Leasowe.—*Ibid.*

Common Tern. (*Sterna Hirundo.*) Sea Swallow. Not many years ago, according to the testimony of numerous fishermen and other neighbouring residents, the eggs of this bird (or of the Arctic Tern) were so plentiful at the beginning of June, on and near the beach north-west of Formby, that it was no uncommon thing to obtain a hatful on passing to or from the sea. The numbers have diminished at a rapidly increasing ratio of late years—in 1864 only two pairs being seen, and few eggs are now obtained by any. Unlike their fellows on Walney Island and other quiet localities, the tern here breeds upon the tops of sandy hillocks in place of the usual open gravelly beach or level bottomed inlet among the adjacent sandhills. The bird is not known to breed upon the Cheshire shores.—*Ibid.*

Lesser Tern. (*S. Minuta.*) I have found breeding during the past two seasons upon sand banks lying off the neighbouring Welsh coast, where it bears the name of "*pŭrgeon.*" Mr. Brockholes's notice of this *or* the preceding species having been known to breed at Hoylake, may possibly be correct of the present one before the island was so much visited as of late years. It must be remarked, however, that very few spots exist (*i.e.*, banks of gravelly sand remaining uncovered at highest

spring tides), where alone the bird would incubate, either on the main shore or around the islands of Hilbre.—*H. E. S.*

Habits of the Cuckoo. In June, 1863, I found near Formby nests of the Titlark or Meadow Pipet (*Anthus Pratensis*) each containing a couple of eggs of the cuckoo, and similar instances are there reported to be far from uncommon. These facts, in connection with the deposition of eggs by the bird at unseasonable hours, and frequently in nests into which it would be physically impossible to introduce its body for ordinary extrusion, have excited so considerable an amount of curiosity and interest as to warrant notice here. I have read of one of our naturalists who, having observed a cuckoo flying off with an egg in her bill, shot at and wounded the bird, which dropped the egg, this proving to belong to the *species* at any rate, and was in all probability her own. The circumstance corroborates a growing belief that this curious bird, with whose habits we are evidently as yet most imperfectly acquainted, is often in the practice of depositing its egg by extrusion in some convenient spot—often possibly in no nest at all—and subsequently, by means of its bill, removing it to the nest selected for its incubation and the rearing of the produce. This habit of the bird, if an absolute fact, renders it impossible to prove, in the case of duplicate eggs in one nest, firstly that such were deposited by the same bird, as *prima facie* one would be disposed to believe; or, secondly, whether or no one of the two was not a merely temporary deposit, awaiting removal to a more permanent abode. In each of the Formby instances one of the two eggs proved not only smaller but of a lighter colour than the other, much lighter indeed than usual, causing me to suspect the birds to have been young parents, and to conclude the

pair of eggs in each case as the produce of one bird, and destined to remain where found for incubation, a belief I now cannot feel warranted in thoroughly entertaining. Throughout the country the nest generally selected as the most desirable receptacle for a cuckoo's egg is that of the titlark, a small bird; and it is known that to supply the voraciousness of a young cuckoo (the other young occupants having all been made away with), all the energies of the builders and owners of the nest are most heavily taxed. What chance then remains for the sustenance and rearing of a couple of cuckoos in one little nest? Instances have indeed occurred of two in a very young state being so found together, but none, that I am aware of, of such in a more advanced condition, and it seems very problematical whether two could be reared into healthy independence in a single nest. Notices have not unfrequently appeared in *The Field* newspaper, *The Zoologist*, and other natural history journals, of the eggs and young of this species being found in nests placed in small holes of walls, trees, &c., where no cuckoo could have voided its egg; and cases have occurred within my own experience in this neighbourhood—in fact, one of the Formby nests, containing duplicate cuckoo's eggs, was placed under turf sods, the (lateral) opening being far too small to have admitted the body of a cuckoo, and consequently both must have been otherwise introduced, *i.e.*, by bill or claw. A remarkable instance of anomalous and unseasonable deposition is appended, extracted from the *Scrap Book*, third series, p. 238.—*H. E. S.*

When out nesting on the Crosby sandhills this evening (May, 1864), I found a titlark's nest containing five eggs, one of them being a very large fine-coloured cuckoo's; all were half set. Within a few yards, and on the same

bank, I found another titlark's nest with four young, so far grown as to fill the nest quite level with the top when they were at rest. This was between 6 and 7 p.m. Passing again at 8 p.m., I took another look at the latter nest; and to my surprise, found *lying on the top of the young birds* a cuckoo's egg, quite fresh, and evidently placed there within the hour. It certainly was not there when I found the nest; for I took into my hand all the young birds, and the nest was then empty.—*C. S. Gregson.*

BOTANY.

The long-promised "*Flora*" of Liverpool and its immediate neighbourhood is not yet forthcoming; and it is to be feared that some considerable time may still elapse ere their copies will reach the hands of subscribers.*

Under these circumstances, unconnected as the compiler is with the projectors of this long desiderated work, it proves no light task impartially to edit even a comprehensive *digest* of recent botanical action and successes. Nevertheless, he trusts the following will prove a fair representation of these, through the kind liberality of Messrs. H. S. Fisher, F. M. Webb, Thomas Gibson, Sen., Miss Grundy, and other well-known local botanists, their information being supplemented from the late lamented *Scrap Book*, and the private notes of personal friends.

Upon introducing his catalogue it should be noted that, in addition to the discovery of native *British* species new to our district, and of others in fresh localities, many have been noticed imported in ballast, seed, or other foreign produce, and which are or appear likely to become *naturalized* with us; these, however, will be found in a separately appended list. Although, through the late enormous spread of buildings upon both sides of the estuary, many stations of scarce and

* Since commenced in the pages of a local monthly serial, *The Liverpool Naturalists' Journal.*

interesting native plants know them no more, yet in several cases species presumed to be extinct have recently been remarked.

In the general flora the Rosæ have lately been well studied, and the lists of local species (with varieties), greatly extended by Messrs. Webb and Fisher, whilst Mr. Marratt has especially devoted himself to the Musci and Algæ. To Mr. Thomas Gibson, Sen., however, a final word of tribute must here be accorded. Entering the field of botanical research at a time of life when most campaigners, satisfied or not with fairly-won honours, feel disposed to resign into younger hands the more arduous exercises of the pursuit, this gentleman has "borne "the burden and heat of the day" most indefatigably; and his eminent success in this as in other branches of Natural History, attests his discriminating abilities, and unmistakably crowns him as the acknowledged victor in our late campaigns.

Dicotyledonous or Exogenous Plants

Thalictrum Minus. (*Lesser Meadow Rue.*) Sandhills opposite West Kirby.—*Miss C. Grundy; F. M. Webb.*

Ranunculus Hirsutus. (*Pale hairy Crowfoot.*) Road side, Bidston, 1863, *F. M. Webb* and *H. S. Fisher;* fields at Claughton, 1864, *T. Gibson, Sen.*

R. Circinatus. (*Rigid-leaved Water Crowfoot.*) Pit at Claughton, 1864.—*T. Gibson, Sen.*

Caltha Palustris. (*Marsh Marigold*), Var. *Minor.* In a ditch at Ditton, 1864.—*Ibid.*

Glaucium Luteum. (*Yellow-horned Poppy.*) West Kirby shore, *Miss C. Grundy;* Formby shore, but growing very scarce, *Wm. Harrison; H. E. Smith.*

Aquilegia Vulgaris. (*Columbine.*) South end of Bromborough woods, June, 1863, *Miss A. R. Smith.* North end of the same, May, 1865, *H. Ecroyd Smith* and *Walter Jones.* First found by Miss Smith as above, but

others have taken the credit. Here the plant grows most naturally, and is, I have no doubt, *native*. In the "Flora" it is only mentioned as an outcast from gardens.—*H. E. S.*

Barbarea Intermedia. (*Intermediate Winter Cress.*) Fields at West Derby.—*F. M. Webb* and *H. S. Fisher.*

Armoracia Amphibia. (*Horse Radish.*) Copper Works, Seacombe.—*Ibid.*

Senebiera Didyma. (*Lesser Wart Cress.*) On several banks round open ground in the westward outskirts of Birkenhead.—*H. Ecroyd Smith.*

Reseda Fruticulosa. (*Shrubby Base Rocket.*) Waterloo, 1865, *Thomas Gibson, Jun.* (Not to be found on Crosby sandhills, *Wm. Harrison.*)

Cerastium Arvense. (*Field Mouse-ear Chickweed.*) Hilbre and Banks of Dee, West Kirby.—*Miss C. Grundy.*

Saponaria Officinalis. (*Soapwort.*) This plant is erroneously stated in the "Flora" to be abundant at Hoylake and frequent at Bidston, Crosby, Southport, &c.; it is of very rare occurrence in the district, except as an outcast from gardens or remanet of former cultivation.—*Wm. Harrison; H. E. Smith.*

Spergula Subulata. (*Awl-shaped Pearlwort.*) Hill above Thurstaston.—*Miss C. Grundy.*

Stellaria Glauca. (*Glaucous Marsh Stitchwort.*) Southport, 1863. *T. Gibson, Sen.*, thus confirming its introduction into the "Flora" among Aughton's list of Southport plants.

Dianthus Deltoides. (*Maiden Pink.*) Sandy fields, West Kirby.—*Miss C. Grundy.*

Silene Anglica. (*English Catchfly.*) Cultivated fields, Little Meols.—*H. E. Smith.*

S. Noctiflora. (*Night-flowering Catchfly.*) Cornfields, Crosby, 1864.—*Mrs. Thomas Gibson, Jun.*

Althæa Officinalis. (*Marsh Mallow.*) Dr. Dickinson doubts the existence of this plant near Southport, but it was found there in 1863 by Mrs. T. Gibson, Jun., and Miss Gibson.

Geranium Pusillum. (*Least Crane's Bill.*) Road sides, West Kirby, and waste ground near the shore, New Brighton, 1864. *Miss C. Grundy.*

G. Sanguineum. (*Bloody C.*) Re-appeared at Egremont and New Brighton.—*H. Ecroyd Smith; John Armstrong.*

G. Lancastriense. Growing with the last-named near Caldy shore.—*Miss C. Grundy.*

Medicago Maculata. (*Spotted Medick.*) Grows plentifully among waste from a tanner's yard, at Bootle Delf, 1865, *H. S. Fisher;* near Parkgate, *W. Harrison.*

Trigonella Ornithopodioides. (*Bird's foot Fenugreek.*) Road-side, West Kirby.—*Miss C. Grundy.*

Trifolium Striatum. (*Soft-knotted Trefoil.*) Sandy fields between Leasowe and West Kirby.—*Miss C. Grundy; F. M. Webb.*

Vicia Lutea. (*Rough podded Yellow Vetch.*) New to district. Bank of the Dee, near West Kirby, but the exact locality is lost through a fall of the bank.—*Miss C. Grundy.*

Orobus Tuberosus. (*Bitter Vetch.*) In a wood behind Walton Hall, and in Clegg's Woods, Allerton; but the assertion in the *Flora*, "abundant in woods and shady "places," is undoubtedly a mistake.—*Wm. Harrison.*

Lathyrus Aphaca. (*Yellow Vetchling.*) Corn-fields, Crosby, 1864.—*Miss Richmond.*

Comarum Palustre. (*Purple Marsh Cinque-foil.*) I only know of two localities for this plant on the Lancashire side of the Mersey, viz., Croxteth Park and Fazakerley, although in the *Flora* it is said to be "frequent in boggy "meadows and ditches near Liverpool."—*W. Harrison.*

Rosa (Lin.)

Our indigenous roses have of late times been comparatively neglected, and hardly anything has been written about them for the last thirty years. But thanks to Mr. J. G. Baker, late of Thirsk, and now of Kew, it is likely that the genus will receive more attention by local botanists. His *Review of the British Roses*, published in the *Naturalist*, and now in course of illustration by the issue of specimens of the principal forms described, places, in a complete form, his labour in working out this difficult genus, according to the modern view of the best Continental botanists, who have devoted much study to the subject. Furthermore, we now have, in the beautiful and excellent third edition of *English Botany*, a description of the genus in great measure based upon Mr. Baker's pamphlet.

In the *Proceedings of the Historic Society of Lancashire and Cheshire*, vol xv, pp. 93, 94, Mr. Fisher made a recapitulation of all then known of the species occurring in our district, and their distribution. The following list includes the information contained in his, which in its turn contained what is given in the published *Floras* and supplements; and in giving the present statement, the desire is to place before our botanists a list arranged in conformity with Mr. Baker's work.

Rosa Spinosissima. (Linn.) Very abundant upon the sand-hills, and occasionally inland.

Rosa Sabini. (Woods.) In a hedge at Liscard, abundant; hedge near the first toll bar on the Upton road; near Raby mere. These localities are all in Cheshire, and it has not yet been met with on the Lancashire side. R. Doniana and R. Gracilis, of Woods, sometimes given as varieties, are not distinguishable as such.

Rosa Hibernica. (Smith.) 1.—*Eu-Hibernica*, with hairy petioles, and leaves hairy beneath, occurs sparingly be-

tween Great Meols and Leasowe, Cheshire, by the bridge that crosses the Birkett. 2.—*Glabra.* In tolerable plenty in the neighbourhood of Great Meols, and also occurs at Irby.

Rosa Mollissima. (Willd.) (Fries.) Bathwood, Ormskirk; Hoylake, and near (inland of) Parkgate. This species, commonly called villosa, will probably be found in other localities.

Rosa Tomentosa. (Smith.) Frequent in hedges, &c., both in Lancashire and Cheshire.

Rosa Rubiginosa. (Linn.) Has occurred as an escape from cultivation.

Rosa Micrantha. (Smith.) Has not satisfactorily been proved as a plant of our district. Mr. Fisher refers doubtfully to it; a plant he has from Bromborough, and may be the one he mentions under the last, as from Huyton Quarry, is this species.

Rosa Jurdzilliana. (Besser.) In a hedge by the roadside between Moreton and Hoylake, Cheshire; only one very vigorous bush, and this is nearly or quite destroyed now, through widening the road and removing the hedge; but precaution was taken to obtain good shoots of the plant, which are now growing, along with the two forms of R. Hibernica (from Meols), in a field near Claughton village.

The following belong to section Caninæ.

Rosa Lutetiana. (Leman.) Very common in hedges, thickets, &c.

Rosa Dumalis. (Bechstein) Equally common with above.

Rosa Urbica. (Leman.) R. Forsteri E. B. S. Also a very common plant with us.

Rosa Dumetorum. (Thuillier.) Fields between Moreton and Hoylake, also near Bromborough, near the church, Slatey lane, Claughton and Bootle; probably not uncommon.

Rosa Subcristata. (Baker.) This too is probably not un common, but hitherto noticed in only two or three localities on the Cheshire side.

Rosa Tomentella. (Leman.) A plant, probably this, grows near Wallasey.

Rosa Arvensis. (Hudson.) Hedges, thickets, &c.; very common.

R. Canescens (Baker), R. Crepiniana (Dèsèglise), R. Arvatica (Puget), R. Bakeri (Dèsèglise and Syme), are also likely to be met with in our neighbourhood.—*F. M. Webb.*

Myriophyllum Alterniflorum. (*Water Milfoil.*) Hilbre. *Miss C. Grundy.*

Sedum Telephium. (*Orpine or Live-long.*) Narrow lane N.E. of Walton Church; abundant on a hedge-bank just beyond Fazakerley station.—*W. Harrison.*

Eryngium Maritimum. (*Sea Holly.*) Said in the "Flora" to be "common on the sand-hills from the Dee to South-"port;" but even single plants are now seldom found along the Lancashire shore.—*Wm. Harrison.* This remark applies equally to the Cheshire sea beach and sand-hills, but the plant is more frequent on the Dee shore opposite West Kirby.—*H. Ecroyd Smith.*

Bupleurum Tenuissimum. (*Slender Hare's Ear.*) Bromborough pool.—*Miss C. Grundy.*

Smyrnium Olusatrum. (*Alexanders.*) Field near the Church, West Kirby.—*H. S. Fisher.*

Conium Maculatum. (*Hemlock.*) Herb-gatherers have eradicated this pretty but dangerous plant from the vicinity of Liverpool.—*Wm. Harrison.* It has likewise, from the same cause, disappeared from the neighbourhood of Birkenhead, and it is only in some of the more distant villages that small plants can be seen.—*H. E. Smith.*

Torilis Nodosa. (*Knotted Hedge Parsley.*) Bank of Dee near Heswall.—*Miss C. Grundy.*

Sambucus Ebulus. (*Dwarf Elder or Dane-wort.*) Probably extinct as a native of the district.—*Wm. Harrison.*

Tragopogon Porrifolius. (*Purple Goat's-beard.*) Abundant upon the railway bank between Preston Road and Fazakerley stations; also in corn fields adjacent to the railway.—*Ibid.*

Valeriana Dioica. (*Small Marsh Valerian.*) Near the mouth of the Alt, left bank.—*H. Ecroyd Smith.*

Serratula Tinctoria. (*Saw-wort.*) Speke woods, 1864.—*T. Gibson, Jun.* Woods near Speke and Hale, 1865.—*H. E. Smith.*

Centaurea Scabiosa. (*Greater Knapweed.*) Greenbank Farm, 1865.—*H. Gibbons, Jun.*

Antennaria Dioica. Sand-hills, Ainsdale, 1863.—*T. Gibson, Sen.* and *H. S. Fisher.* Crosby sand-hills, 1865.—*Wm. Harrison.*

Campanula Latifolia. (*Giant Bellflower.*) Ince Blundell woods, viz., that near the Church and in another between the Church and the hall, July, 1864.—*H. E. Smith.*

Erythræa Pulchella. (*Dwarf-branched Centaury.*) On fresh-turned ground at Wallasey, 1864.—*F. M. Webb* and *H. S. Fisher.*

Calystegia Soldanella. (*Sea-side Convolvulus.*) Shore opposite West Kirby.—*Miss C. Grundy; H. E. Smith.*

Cuscuta Trifolii. (*Clover Dodder.*) Growing on *Vicia Sativa,* Greenbank farm, 1865. *H. Gibbons, Jun.*

Pyrola Maritima. (*Sea-side Winter-green.*) Very fine in moist seasons in a marshy spot among the sand-hills opposite the north end of Formby, and in occasional damp places towards Birkdale.—*H. E. Smith.*

Anchusa Sempervirens. (*Evergreen Alkanet.*) Allerton, 1864.—*T. Gibson, Jun.*

Symphytum Officinale. (*Comfrey.*) Greenbank Farm, 1865. *H. Gibbons, Jun.*

Datura Stramonium. (*Thornapple.*) Ditto. *Ibid.*

Linaria Vulgaris, var. Peloria. (*Toadflax.*) Seaforth, 1864. *T. Gibson, Sen.*

Pinguicula Vulgaris. (Butterwort.) Middle of Simonswood moss, very fine, 1863 or '64.—*W. Harrison.*

Primula Acaulis. (*Common Primrose*, var.) Fields near Hale.—*Miss C. Grundy.*

Plantago Media. Field, Oxton.—*Mrs. F. Boult.*

Polygonum Fagopyrum. Greenbank Farm, 1865.—*H. Gibbons, Jun.*

Daphne Laureola. (*Spurge Laurel.*) I never felt more satisfied of the indigenous character of any plant than I do of this, on the clay-banks of the Mersey below the decoy at Hale; it is also abundant on a hedge-bank near Halewood.—*W. Harrison.*

Monocotyledonous, or Endogenous Flowering Plants.

Neottia Spiralis. (*Fragrant Ladies' Tresses.*) In fields between Leasowe and West Kirby.—*Miss C. Grundy.*

Ophrys Apifera. (*Bee Ophrys.*) Fields, West Kirby.—*Ibid.*

Habenaria Viridis. (*Butterfly Orchis.*) Field near Bidston. *Mrs. F. Boult.*

H. Bifolia. Hilbre islands, 1863, *H. Ecroyd Smith;* 1864, *T. Gibson, Sen.*

Ornithogalum Umbellatum. (*Star of Bethlehem.*) Southport, 1863.—*T. Gibson, Sen.* Excessively abundant, July, 1864, in a meadow (since tilled) between Formby and the sand-hills.—*H. Ecroyd Smith.*

Narcissus Pseudo-narcissus. (*Daffodil.*) Abundant on a hedge-bank at Orrell hill. It is now extinct at the Bank Hall station and very scarce at Fazakerley.—*W. Harrison.*

Allium Vineale. (*Crow Garlick.*) Plentiful on Hale marsh, growing amongst *Armeria Maritima.*—*Ibid.*

Potamageton Rufescens. (*Red Pond-weed.*) Near Warrington, 1864.—*T. Gibson, Sen.*

P. Heterophyllus. (*Various-leaved P.*) Fiddler's Ferry, 1865.—*Ibid.*

Poa Compressa (*Flat-stalked Meadow-grass.*) Parkfield, 1865.—*H. S. Fisher.*

Festuca Uniglumis. (*Fescue-grass.*) Sand-hills at Hoylake. *Miss C. Grundy.*

Bromus Pseudo Myursus. (*Brome-grass.*) West Kirby.—*F. M. Webb.*

Avena Pubescens. (*Downy Oat-grass.*) West Kirby.—*Miss C. Grundy.*

Triticum Caninum. (*Wheat-grass.*) Speke.—*Ibid.*

Lepturus Incurvatus. (*Hard grass.*) Ditton marsh, *H. S. Fisher;* shore, Fulwood park.—*Miss C. Grundy.*

Elymus Arenarius. (*Upright Sea Lyme-grass.*) Grows in several places between Bootle and Walton.—*W. Harrison.*

Lolium Temulentum. (*Darnel.*) Abundant in corn fields between Bootle and Walton gaol.—*Ibid.*

Acotyledonous or Cellular Plants.

Aspidium Lobatum. (*Close-leaved Prickly Shield Fern.*) The *Flora* tells us this fern is "common on both sides of the "Mersey." This I cannot assent to, though it is abundant around the New Hut, Hale, and grows at the other stations recorded.—*W. Harrison.*

A. Oreopteris. (*Heath Shield Fern.*) Plentiful in a ditch on the side of the road from Orrel hill to the east side of the Cemetery at Ford.—*Ibid.*

Polypodium Dryopteris. (*Oak Fern.*) Landican, Dec., 1865.—*John Armstrong.*

Ophioglossum Vulgatum. (*Adder's Tongue.*) Abundant near Eastham ferry, *Miss C. Grundy* and *T. Gibson, Sen.;* New Brighton, *Jno. T. Towson, F.R.G.S.;* Meadows near Leasowe, *H. Ecroyd Smith.*

Botrychium Lunaria. (*Moonwort.*) Abundant in a waste field between Little Meols and Grange, and in a meadow between Great Meols and the Dove Marks, June, 1865, *H. E. Smith;* Racecourse at Hoylake, *J. T. Towson, F.R.G.S.;* among gorse on waste ground near Claremont school, Wallasey, June, 1865, *Edward Smith.*

Lycopodium Clavatum. (*Com. Club-moss.*) I am afraid this plant is lost to our Flora, as fifteen years have elapsed since I have known any one to find it.—*W. Harrison.* Still grows at Patrick-wood also at Storeton.—*Miss Archer.*

Lycopodium Selago (*Fir Club-moss.*) The *Flora* gives a Lancashire and a Cheshire station for this plant, but the former (Simonswood moss) is lost through cutting of the turf.—*W. Harrison.* I fear it is no longer to be met with at the Cheshire locality (Bidston hill), as I have often searched this ground in vain.—*H. E. Smith.* I found this plant growing upon a knoll in the fir wood just by the quarries at Higher Bebington, in the Autumn of 1863. There was a very small patch of it, and Mr. Brewer, who was with me on the occasion, and I, carried away two or three spikes each, to grow as living specimens in our fern cases. Mine was kept alive with a good deal of tender nursing—as I was rather proud of the foundling—for about twelve months. Upon visiting the locality a short time ago, to verify the "find," I *only found* that it had totally disappeared, owing, no doubt, to the too perfect drainage and consequent unsuitableness of the place for its growth.—*John Armstrong.*

Equisetum Sylvaticum. (*Branched Wood Horsetail.*) Ditch bordering a footpath commencing between Litherland and the Roman Catholic cemetery and running towards Netherton.—*W. Harrison.*

Lycopodium Inundatum. (*Marsh Club-Moss.*) I had the pleasure of finding this little marsh plant in a new

locality, viz.—on Oxton Heath in 1859 or 1860; and have observed that, in somewhat diminished quantity, it still grows on the spot. There is, however, another danger threatening its continued existence, in the extending cultivation of the neighbouring land; and it is to be feared that this latest known Wirral habitat will soon become, like the one upon Bidston Marsh, a thing of the past.—*H. E. Smith.*

List of Algæ new to the District.

Cladophora Pellucida. One specimen procured in a sheltered rock pool on Hilbre island.

C. Flavescens. Bromborough pool and fresh water ponds; a common species.

C. Rudolphiana. Hilbre; a parasite on other algæ.

Rhizoclonium Gaspargi. Very common all round the coast.

Hypnea Purpurescens. Hilbre.

Phyllophora Membranefolia. Plentiful in a quiet rock pool on Hilbre.

Rivularia Plicata. Plentiful all round the coast.

Ocellatoria Nigro-vividis. South shore, Rock Ferry and Eastham.

O. Littorea. South shore, New Brighton and Hilbre.

Sphœozyga Carmichaelii. Muddy ditch near Bromborough pool.

Zygnema Nitida. Ponds at Old Swan; probably common.

Cruoria Pellita. South shore, Hilbre and New Brighton.

Ceramium Acanthonotum.—Hilbre.

Conferva Jaurgana. Wallasey pool and the Life boat, New Brighton.

C. Sutoria. Hilbre.

C. Implexa. South shore.

Calotheia Scopolorum. Hilbre.

Lyngbya Ferruginea. Bromborough pool, Hilbre and South shore.

L. Speciosa. New Brighton.

Ceramium Nodosum.
C. Fastigiatum. } Hilbre.
Cladophora Arcta.

Desmonema Dillwynii.—Near the wooden bridge, Seacombe.

Schizonema Dillwynii.—New Brighton.

F. P. Marratt. (*Vide* "Scrap Book," 3 s., 63-4-9.)

Plants introduced in Ballast or by Seed.

Ranunculus Pensylvanicus. Ballast at Birkenhead docks, 1863.—*H. S. Fisher* and *T. Gibson, Sen.*

Lepidium Ruderale. Ibid. *Ibid.*

Saponaria Vaccaria. Among seeds at Crosby, 1864, *T. Gibson, Sen.;* Greenbank farm, 1865, *H. Gibbons, Jun.;* among ballast at Claughton, 1864, *Mrs. F. Boult* and *H. S. Fisher.*

Trifolium Incarnatum. Little Brighton, with seed.—*F. P. Marratt.*

Melilotus Parviflora. Ballast at Claughton, 1863, *Mrs. F. Boult;* Birkenhead, 1864, *T. Gibson, Sen.*, and *H. S. Fisher;* Parkfield, 1864, *Miss C. Grundy.*

Melilotus Alba. Among ballast at Birkenhead.—*F. M. Webb.*

Lotus Jacobæa. Among corn, Greenbank farm.—*H. Gibbons, Jun.*

Ammi Majus. Ballast at Birkenhead, 1864.—*T. Gibson, Sen.*

Mercurialis Annua. Ibid. *Ibid.*

Note.—The thorough carrying out of the compiler's intention would have necessitated the occupation of more space than could fairly be claimed in these pages, and consequently the matter relative to the lower orders of animal and vegetable life is eliminated, exception being made in favour of that popular class, the Algæ. Enough, however, has been produced to shew that the study of Natural History, far from being retrograde or even stagnant among us, has taken a fresh and, let us trust, a vigorous start, in the promotion of which the Naturalists' Field Club holds a prominent position.

NOTICE OF A RECENT DISRUPTION OF SOIL BY RIMROSE BROOK, BOOTLE.

By Mr. Henry Ecroyd Smith.

(Read 8th March, 1866.)

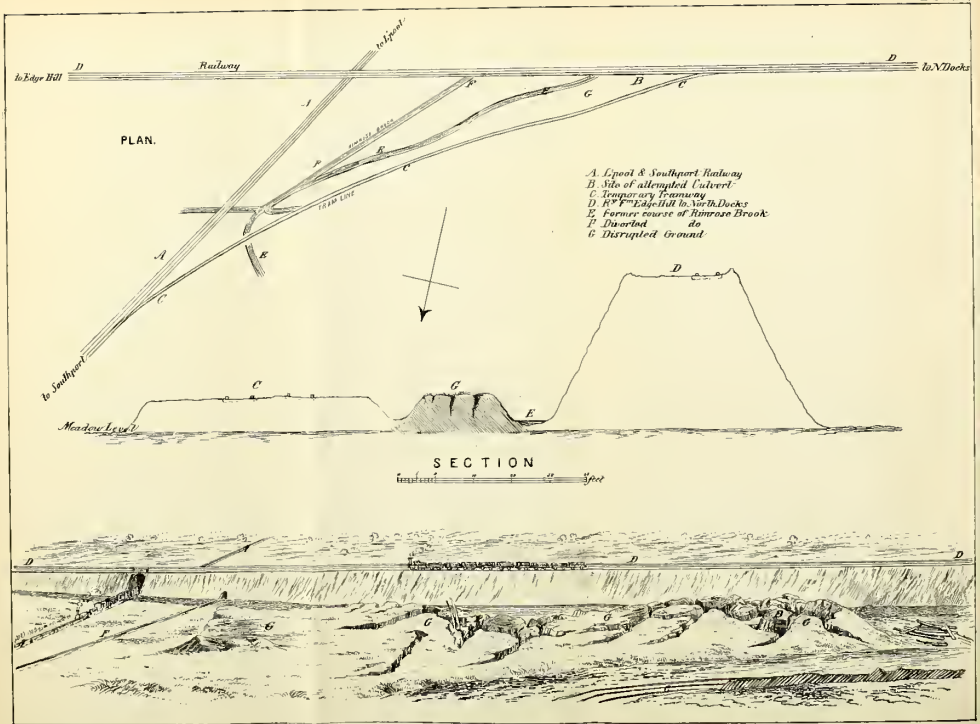
The public have just learned, through a late report of the engineer to the Mersey Docks and Harbour Board, of the serious giving way in a portion of the Northern river or frontage wall, forming the Western bound of the range of docks upon the Lancashire side of the river. The fact will, no doubt, have proved startling to many, but any intelligent person who has taken pains to enquire into the nature of the Bootle shore will by no means share the general surprise. The irremediable error of filling up the Old Dock and there uprearing, upon a site perhaps the very lowest in the town, one of its most important buildings, may well cause astonishment to strangers, more especially when they learn that a permanent obstacle has thus been formed against the construction of a series of comparatively sheltered inland docks, in a good central position, by following up the bed of the ancient Pool and the course of its main feeder. Turning to the reality, we find nearly six miles of docks, mostly in single file—a source of acknowledged weakness and the occasion of an incalculable cost of transit of merchandize; whilst the entrances of the more northerly situated ones are so peculiarly exposed to our strongest prevailing winds as to be frequently unavailable. In addition, as indeed might with good reason have been anticipated from utilizing a site so abounding in springs and quicksands, an important and strongly built wall, erected vertically within a very few years, is now found to overhang its base dangerously, whilst huge iron stanchions, inserted upon the first warning of this tendency, prove to have all been snapped in twain, utterly powerless to arrest it —all resulting from the failing substrata alone.

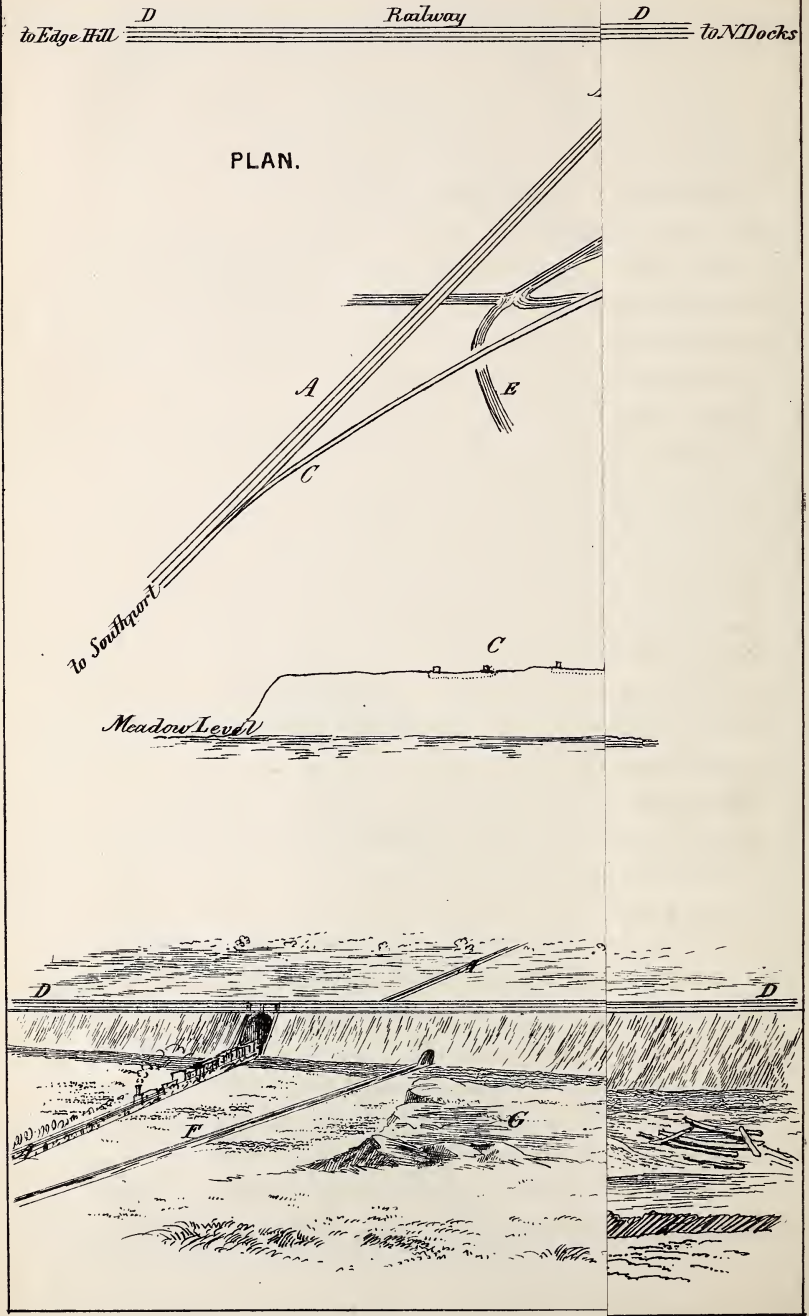
This outer northern river-wall has been proceeded with to a point nearly opposite to that where the Rimrose Brook debouches upon the strand between Bootle and Seaforth. Here a branch railway (see plate DD), for connecting the lines at Edge Hill with the northern docks, has for some little time been in course of construction. To seaward of Derby Road, which it spans at right angles, a considerable number of brickwork piers have been erected for the support of this portion of the line. Whilst delving for their foundations, a peaty soil, of great depth, was cut through, comprising two distinct strata—the intermediate bed being composed of a fibrous blue clay or silt. Of the peat beds, the lower alone was black in colour, firm and solid, and of almost purely arboreal growth; it contains many trees and a few osseous remains, described as "shoulder, knuckle and jaw-bones," probably of deer or the *bos longifrons*, such being common to the earlier of the arboreal deposits throughout South Lancashire. A large tooth was also found, said to be two inches long and nearly as much broad, but this having been mislaid, cannot be certainly appropriated. The upper bed is much lighter, both in consistency and colour; and the fibre of the few tree stumps occurring here is found to be almost as red as mahogany: it is evidently of much later growth than the black stratum below and may date with the woods of the early English forest of Wirral, which prove to be of infinitely later date than the more recent of the ancient arboreal strata exposed upon the sea-beach of Cheshire, hitherto known under the misapplied name of the Submarine Forest.

Returning to the branch line:—When sinking for the foundations of a field bridge, a few hundred yards from the shore and a little to the right or dockward side of the plan, the peat was struck at a depth of six feet (here being six feet to eight feet in thickness), succeeded by six feet of blue silt and ten feet of sand, when the red sandstone was reached. The presence of sand between deposits of peaty soil, below the

This outer northern river-wall has been proceeded with to a point nearly opposite to that where the Rimrose Brook debouches upon the strand between Bootle and Seaforth. Here a branch railway (see plate DD), for connecting the lines at Edge Hill with the northern docks, has for some little time been in course of construction. To seaward of Derby Road, which it spans at right angles, a considerable number of brickwork piers have been erected for the support of this portion of the line. Whilst delving for their foundations, a peaty soil, of great depth, was cut through, comprising two distinct strata—the intermediate bed being composed of a fibrous blue clay or silt. Of the peat beds, the lower alone was black in colour, firm and solid, and of almost purely arboreal growth; it contains many trees and a few osseous remains, described as "shoulder, knuckle and jaw-bones," probably of deer or the *bos longifrons*, such being common to the earlier of the arboreal deposits throughout South Lancashire. A large tooth was also found, said to be two inches long and nearly as much broad, but this having been mislaid, cannot be certainly appropriated. The upper bed is much lighter, both in consistency and colour; and the fibre of the few tree stumps occurring here is found to be almost as red as mahogany: it is evidently of much later growth than the black stratum below and may date with the woods of the early English forest of Wirral, which prove to be of infinitely later date than the more recent of the ancient arboreal strata exposed upon the sea-beach of Cheshire, hitherto known under the misapplied name of the Submarine Forest.

Returning to the branch line:—When sinking for the foundations of a field bridge, a few hundred yards from the shore and a little to the right or dockward side of the plan, the peat was struck at a depth of six feet (here being six feet to eight feet in thickness), succeeded by six feet of blue silt and ten feet of sand, when the red sandstone was reached. The presence of sand between deposits of peaty soil, below the


to Liverpool
to Edge Hill
D
Railway
D
to N. Docks
PLAN.
A
B
C
D
E
F
G
TRAM LINE
to Southport
A. Liverpool & Southport Railway
B. Site of attempted Culvert
C. Temporary Tramway
D. R^d from Edge Hill to N^th Docks
E. Former course of Rimrose Brook
F. Diverted do
G. Disrupted Ground
SECTION
Meadow Level
Feet
GENERAL VIEW, PLAN & SECTION



J. LAWSON, 28, NORTH JOHN ST. LPOOL.

recent surface-strata, contrasts with the Cheshire beds, where below the thin bed of blue silt, superincumbent upon the upper black woody stratum, no sand whatever appears, proving in ancient times a sufficient height or distance from the shore for security from the drift sands under which the surfaces in mediæval and later times have succumbed. On the Bootle and Seaforth shore, wherever the shifting sand has replaced the original peat and clay beds, springs and their concomitant quicksands occur. Only a couple of summers ago, a gentleman with whom I was personally acquainted, almost lost his family and himself in one of these dangerous spots; and yet the accident occurred within two hundred yards of a row of *bathing machines!*

Proceeding up the line, the former but now dry bed of the Rimrose Brook, upon the right, arrests attention—its course, nearly a quarter of a mile higher up, having been diverted for the purpose of constructing some "sidings," now forming a portion of the tramway embankment (C), upon which the visitor is supposed to be standing, has exercised a remarkable influence upon the intermediate ground (G). This comprises sod and soil, viz.,—light upper peat—loamy sand—boulder clay; the last abounding with hollows filled by the sand, the larger ones being the orifices of springs, all probably originating in a similar cause. The incongruous stratification here has been so compressed by the converging embankments as to cause the soil, peat and sand (G)—and partially both to the eastward and westward—to surge up in ridges varying from ten to fifteen feet in height above the original level, as still plainly to be seen by comparison with the remaining and unaffected portion of the meadow lying north of the tramway. Through the kindness of his friend, Mr. H. H. Vale, architect, the writer is enabled to supply a vertical section, illustrating all the elevations here, both natural and artificial: they are lettered to correspond with the general view and small plan. The disrupted masses are pervaded by large gaping crevices,

presenting the *appearance* of volcanic action and measuring from two to seven feet in depth. Whilst the artist was, at or near the point B, engaged in sketching the general view, a train of ballast trucks passed along the line (D), when the vibration proved so great that it became necessary to suspend operations for a few moments ; and casting his eyes upon the summits of the disrupted ridges, they were seen distinctly quivering against the sky. But a more practical illustration is afforded in the costly experience of the contractors for this line, in the attempted construction of a large culvert under the point at B. Here, Mr. Thompson informs me, above thirty of his men were busily employed for many weeks, endeavouring, by the use of clay and large balks of wood, to effect their purpose, but in vain ; for the treacherous soil all but swallowed up the balks ; and, although upon making another attempt at a spot more removed from the old bed of the stream, the timber partially re-appeared, the job was necessarily abandoned, after a great expenditure of time, labour and money.

The above proves to be by no means a solitary instance of excessive dislocation of the ground, from a convergence of embankments—instances having occurred in Staffordshire and elsewhere ; but the facts transpiring in our own immediate neighbourhood, and forcibly illustrating, as they do, the instability of the substrata over a considerable area landward, they appear worthy of record. The old Rimrose Brook is understood to have been, for some half-mile upward from the beach, a salt-water creek, but it can only have become so partially and in recent times, or the peaty beds above described would have been scooped away in an increasing volume to seaward ; whereas, as we have seen, considerable deposits of vegetable growth were found close to the littoral outlet of the brook.

ORIGINAL LETTER, REFERRING TO THE PRETENDER'S MARCH INTO ENGLAND IN 1745.

Contributed by General the Hon. Sir Edward Cust, K.C.H.

(Read 15th March, 1866.)

[This document was found by Sir Edward Cust among some family letters in an old portmanteau. Sir Henry Marshall, M P., was an Alderman of the City of London, who had been Lord Mayor the previous year.]

S^r^

If God is pleased to send us such tryals we must bear it, but I woud not purchase all the honours & riches of the world, by undergoing such another day & night as I did from sat noon untill Sunday morn 7 a clock, on sat noon 3 expresses came in to let L^d^ mayor (& one to the dean) know the Rebels were turn'd back into Yorkshire, & woud be at york on monday, all faces gather,d blackness indeed, people run about the streets crying we are ruined, & we who had not pack^d^ began to secure a few of our best effects, every coach in york was hired to carry the woman out of present danger, I had share wth a family of a coach & a waggon for Hull & so over Humber, but after all the hurry I am here still, for sunday morning we rec'd an express that it was but part of the rebels who were come as far as Rochdale, for to plunder, & get horses & turnd back to Manchester a gain, Gen: Oglethorps foot came in yesterday evening, & are still comeing in, a few horse came yesterday & we expect part of Wades to morrow, but I who do not understand the art of wars so well as I do the principles of the welsh, fear that they will get into Wales; if they do not it is thought

that this neighbourhood will be the seat of war: at least 20 coaches & 6 went out yesterday morning wth: 7 or 8 people in each, but to day we are quiet;

We have clapd a phicisian into the castle who has been in the pretenders camp, his name Burton, I dont love to give charrecters of people but we always say that He is a fool who hangs himself & he is sayd to have confess'd more then He need: the gates are double gaurded every night.

pray write me a line

y^{rs} T B in an hurry

Dec 1st (1745)

(Addressed)

To

Sr Hen: Marshall

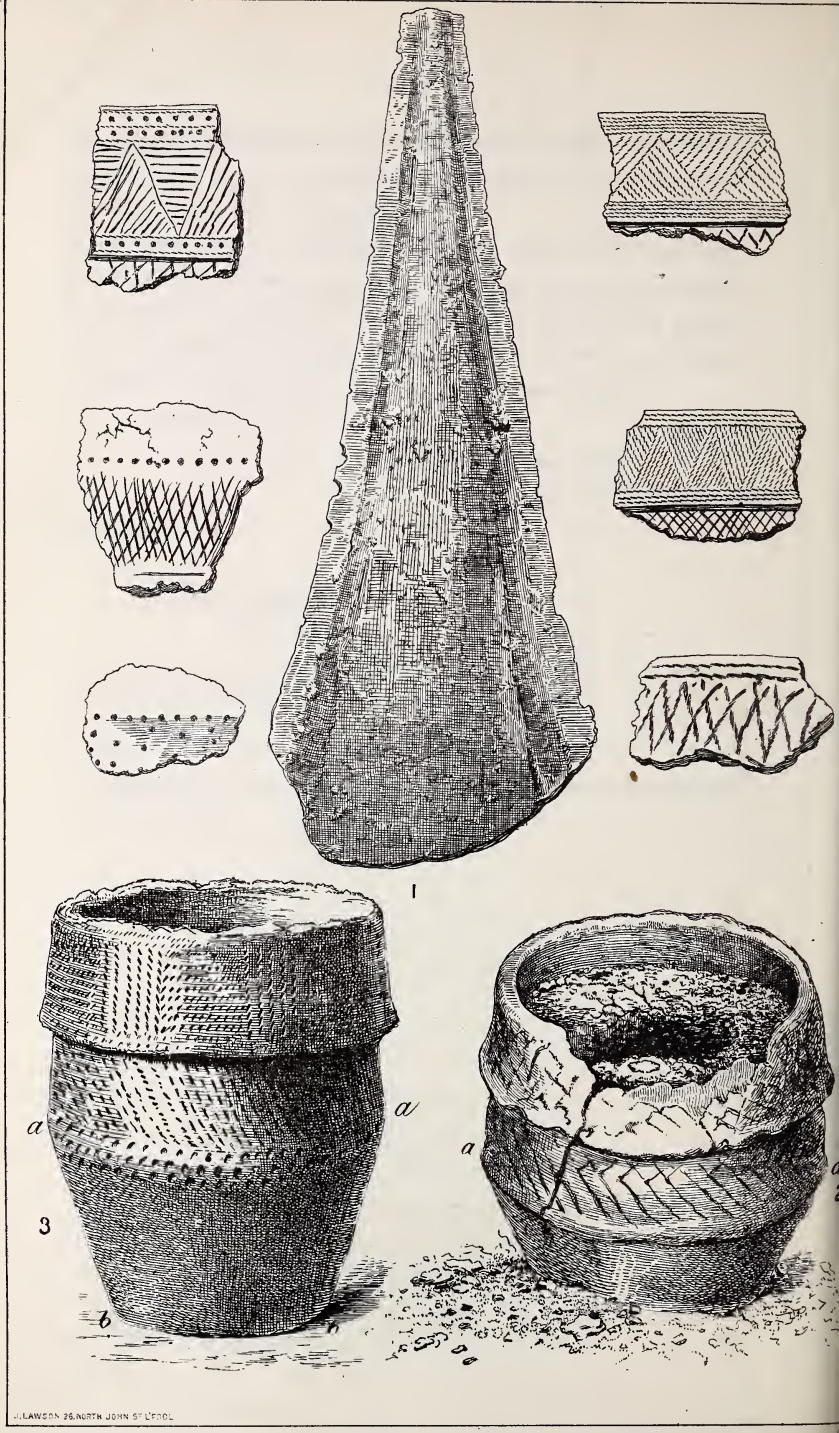
at St Mary Hill

London

Memb^{r} of Parliament

(Endorsed)

Written from York; put into the post at Tadcaster and bears that post mark.



J. LAWSON 26, NORTH JOHN ST. LPOOL

BRITISH REMAINS, FOUND AT DARWEN AND EXTWISTLE.

ANCIENT BRITISH REMAINS AT OVER DARWEN.

By Charles Hardwick,

Author of "*The History of Preston and its Environs.*"

(Read 2nd November, 1865.)

On the receipt of information, in November, 1864, that sepulchral and other remains, supposed to indicate Roman occupation in the neighbourhood of Darwen, had been discovered, I visited the locality, and inspected the site and the archæological objects disinterred. W. Shorrock Ashton Esq., the owner of the estate, most courteously permitted the fullest examination of the remains, and communicated all necessary information.

The tumulus in which they were found is situated to the right of the highway leading from Darwen to Bolton, in the park land attached to Whitehall, and contiguous to that of Low Hill House, the seat of Ellis Shorrock Esq. The property formerly belonged to the Trafford family, and tradition further asserts the ancient proprietorship of the elder Earls of Derby. About a mile and a half distant, on the hills to the west, is a place named the "Lion's Den," and a residence, a little nearer, called the "Lord's Hall." The Roman road which passes from Manchester, by Cockey Moor, to Ribchester traverses the township about a mile to the east of the site of the discovery.

The tumulus appears not to have been altogether artificial, as the burial urns were found within a foot or two of the surface, and were embedded in the original or unmoved earth. Still, from its form, and the slightly scarped appearance of its

sides, it is probable that a favourably situated natural hillock has been converted into a "barrow" by artificial means. It is of a circular form, about thirty yards in diameter, ten or twelve feet high on the east side and between two and three on the west. There was, as is usual in burial tumuli, a slight hollow on the crown of the mound. It stands upon what may be termed the "naze" or promontory of an undulating plateau, overlooking the Darwen valley eastward, but it is sheltered by the high hills which separate that stream from its tributary, the Roddlesworth, on the west.

About fifty or sixty years ago the mound was planted with a circle of trees. These had recently been felled, with a view to the appropriation of the site for a villa residence for Mrs. Ashton. In the course of the necessary excavations for this purpose the objects of archæological interest were discovered. Some remains of a gravelled road were likewise traced, but this is believed to be, relatively, of a much more modern date.

At the time of my visit Mr. Ashton had obtained nine distinct cremated interments. He has since found another. In eight instances the ashes and fragments of burnt bones were enclosed in urns of rude pottery. In one instance, the *debris* of the funeral pyre appeared to have been consigned to the earth without the protection of an urn or coffin of any kind. Eight of these interments were found within a space of about twenty-one feet by fourteen. One urn was distant from this group about forty feet. The whole, with one exception, were placed in the earth with the orifice or aperture upwards. These were covered with rude slabs, two of which were secured in good condition; others were broken by the workmen's picks. One urn, without a slab, had been deposited in an inverted position. It is highly probable there may be some significance in this circumstance. It is not a very uncommon one in connection with ancient British interments. A barrow of this class, opened in 1825 in Dorsetshire, by

Mr. W. Augustus Miles, presented a similar feature. The urns at Darwen were generally found under small heaps of stones, which, it would appear, had either been placed there for the protection of the interments, or to mark the locality. Several of the urns were broken into fragments, but two were in a very fair state of preservation. A small earthenware vessel, between two and three inches in diameter, was found amongst the bones in one of the urns. It is not very unlike a lamp in form, but it is much ruder, both in design and manufacture, than those commonly found in connection with Roman interments. Another somewhat similar, but larger vessel, resembles very much the rudely fashioned crust of an ordinary pork pie. This, however, though enclosed in a larger urn, was filled with ashes and fragments of bones. The whole of the pottery is of a very primitive character, and resembles to some extent both that usually attributed to the early Pagan Anglo-Saxons and that of the British population resident in England both before and after the Roman conquest. Their forms have not the full round contour of urns notoriously Roman. One, especially, has the somewhat angular form of the Anglo-Saxon urn figured by Mr. Thomas Wright, at page 422 of his *Celt, Roman and Saxon*, but the neck is not nearly so narrow. The ornamentation has been chiefly effected with the point of a stick, while the clay, which has been very coarsely kneaded, was in a soft state. The "cross-hatching" kind of lines, and the series of dots, common to ancient British ware, predominate. But, as the former is sometimes found on what are described as rude Roman or Romano-British urns, and the latter on Anglo-Saxon pottery, there is a difficulty in deciding from these evidences to what period the remains belong. No coins had been found, though some pieces of bronze *possibly* might have been coins, but they were far too much corroded to furnish any evidence of the fact. In one of the urns, however, a spear-head was deposited.

Without the spike by which it was attached to its shaft, it measures seven and a half inches in length. It is nearly three inches broad at the widest part, where it is three-eighths of an inch in thickness. (Pl. xv, fig. 1.) It is not formed like the Roman spear-head, which presents a convex contour like the blade of a surgeon's lancet: on the contrary its contour is concave. In this respect it resembles the Saxon weapon figured by Mr. Wright (No. 7) opposite p. 404 in his *Celt, Roman and Saxon*. But these Saxon spear-heads are all of iron, whilst those of British warriors were generally, if not universally, of bronze, and of a somewhat similar form. As the spear-head found at Darwen is of bronze, the probability is that the remains pertain to the ancient British period. The character of the barrow and the mode of interment answer exactly to the description of an authentic British burial place of this class. Consequently, the locality may have been the cemetery of the chiefs of some powerful tribe of the Volantii or Setantii, or of the Brigantes, with whom they were incorporated before the advent of the Roman legions. Or it may have been the burial place of chieftains who fell in some of the numerous engagements which took place between the Romans and the Brigantes, from the time of Venutius (the husband of Cartismandua, the Brigantine queen who betrayed the brave Caractacus), soon after the middle of the first century, to the year 79, when Julius Agricola completed the conquest. The remains interred without an urn may have been those of some captive or captives, immolated as a sacrifice to the manes of some distinguished warrior slain in battle.

The mound is situated at the head of the romantic valley of the Darwen. Near the junction of this river with the Ribble, opposite to Preston, the present writer, about ten years ago, discovered the remains of a Roman station, where he, Dr. Robson and others, in a revision of the ordinarily ac-

cepted Roman topography of Lancashire, place the station Coccium, of the Itineraries. The site of this station forms part of the battle-field on which Oliver Cromwell defeated the Scottish army, led by the Duke of Hamilton, in 1648. The victory is referred to by Milton in the following line in his sonnet to Cromwell :—

"Darwen's stream with blood of Scots imbued."

I heard that there is a tradition, yet implicitly relied on, which speaks of a battle fought in "the olden time," somewhere in the neighbourhood of Tockholes, in the Roddlesworth valley, and stories that remains, including those of horses, have been found, which are believed to confirm it. Respecting this I may have something to say in a future paper. A superstitious reverence for the mound near Whitehall has descended to the present day. The country people speak of the place as being haunted by "boggarts," and children have been known to take off their clogs or shoes and walk past it barefooted, in the night time, under the influence of some such feeling.

In Lancashire and other parts of the country these barrows or tumuli are sometimes termed "lows," from the Anglo-Saxon *hlœw*. It is not, therefore, improbable that the name of Mr. Shorrock's mansion, "Low Hill House," may have some remote reference to the tumulus near which it is situated.

I forward with this paper a drawing I made some time ago from an ancient British burial urn found beneath a low mound, with a circle of stones at its foot, on the property of R. Townley Parker Esq , at Extwistle, near Burnley, in 1858 (Pl. xv, fig. 3.) Some Yorkshire antiquary had dug it up; but on Mr. Parker's remonstrating, he forwarded the urn to Cuerdale Hall, where, I believe, it now remains. The most perfect ones found at Darwen are of a similar character,

They are, however, wider at *a a* and narrower at the bottom *b b*, which causes the angle of the profile at *a* to be more acute. Mr. Parker very kindly expressed his willingness to incur the expense of the necessary labour, if the Historic Society, or any section thereof, wished to explore several other ancient mounds and entrenchments on his estates at Extwistle.

Note.—The remains which form the subject of the foregoing paper, and a small urn with its contents undisturbed which was subsequently found at the same spot, are now in the Society's Collection in the Mayer Gallery of Antiquities, Free Public Museum, Liverpool. The objects figured in the illustration opposite p. 273 are (1) the spear-head noticed at pp. 275—6; (2) the small urn already mentioned in this note: it measures 7½ inches in height, the external diameter at *a a* being the same; (3) the urn found at Extwistle, mentioned at p. 277; and six fragments of the other urns found at Over Darwen, described at pp. 274—5.—[Ed.]

DISCOVERY OF A ROMAN HOARD IN EAST LANCASHIRE.

By Charles Hardwick,

Author of "*The History of Preston and its Environs.*"

(Read 4th January, 1866.)

Being in the neighbourhood of Bury in July, 1864, and learning that a quantity of Roman coins and other objects had been discovered near "Grant's Tower," I visited the locality and examined such of the remains as had escaped dispersion. I was fortunate in meeting with three gentlemen, into whose hands the chief objects had fallen, each of whom courteously afforded the fullest opportunity of minute inspection. On arriving at the locality of the find I was likewise with equal freedom permitted to examine all the coins and other articles which then remained in the possession of the farmer who made the discovery. From these sources I have been enabled to gather the following trustworthy information respecting this interesting contribution to local archæological knowledge.

The urn, or small earthenware vessel, in which the coins &c. were deposited, was found buried in the earth, near a modern occupation road leading to a farm house inhabited by Mr. Nuttall, on "Throstle Hill," in the township of Walmersley. The locality is situated about three miles, in a straight line, to the north of Bury, and about half a mile to the east of "Grant's Tower." It is distant about three miles from the Roman highway which leads from Manchester, by Cockey

Moor, to Ribchester. The old road from Bury to Burnley and Colne passes near the spot.

The earthenware vessel which contained the hoard was covered by a small flag. It was buried on the edge of the moorland overlooking a well cultivated but secluded and picturesque valley. It contained from five to seven hundred bronze coins, chiefly of the small or "third brass," all of which belong to what is termed the "lower empire." None that I have seen are earlier than the time of Gallienus and his wife Salonica (A.D. 253-268). The latest, in point of date, are coins of Maximianus (286-310), and Carausius (287-293). I noticed others of Posthumus (260-267), Victorinus (265-267), Claudius Gothicus (268-270), Tetricus (267-272), Quintillius (270), M. Claudius Tacitus (275-276), and M. Aurelius Probus (276-282).

The following articles were deposited with the coins :—

A pair of silver bracelets, slightly, not elaborately, ornamented, one with the vine leaf the other with bunches of grapes. The latter was broken, the former perfect. The workmanship is not of a superior character, but rather suggestive of provincial inferiority, or a low period of artistic skill.

A plain bracelet of massive silver, about one-third of an inch in breadth, broken.

Two armlets, one about one-eighth of an inch in thickness, formed of twisted silver cord, the other about one-tenth of an inch thick, formed of a single wire fashioned so as to resemble the one made of two twisted cords.

Two fragments of another armlet, about a quarter of an inch in diameter, formed of thick silver wire twisted round a bar of bronze.

Three silver finger rings, one with a red stone attached.

Several pieces of broken silver rings, like wedding or ear

rings in form ; and some pieces of a thin bronze armlet, and a small bronze hinge.

The blade or bowl of a bronze spoon, elegantly shaped, rather more than one inch and a half in length, by a little over half an inch in breadth.

An amulet of amber, richly streaked with orange-coloured veins, and pierced so as to be suspended alone, and not so as to form a portion of a continuous string of beads. This, perhaps the most interesting relic in the "find," is heart-shaped, and measures less than an inch in its longest diameter.

There have been several treasures of a similar character found in Lancashire, in recent times, besides others at earlier periods. Amongst the former may be mentioned one not very far from the site of the present hoard, which was discovered in 1856, in the neighbourhood of Hooley-wood, near Heyworth, on the estate of John Fenton Esq. ; one at Whittle, near Chorley, in an old stone quarry ; one, containing a hundred denarii, of the "higher empire," at the foot of the old "Wery Wall," at Lancaster, in 1856 ; one on Leyland Moss, in 1820 ; and another at Worden, near Leyland, in 1850.

It has been customary to regard these buried treasures as archæological evidence of the truth of the following extracts from Saxon authorities :—

A.D. 418.—"In the ninth year also, after the sacking of Rome by the "Goths, those of Roman race who were left in Britain, not bearing the "manifold insults of the people, bury their treasures in pits, thinking "that hereafter they might have better fortune, which never was the "case ; and, taking a portion, assemble on the coasts, spread their "canvass to the winds, and seek an exile on the shores of Gaul."—*Ethelwerd's Chronicle.*

A.D. 418.—"This year the Romans collected all the treasures that "were in Britain, and some they hid in the earth, so that no one has "since been able to find them ; and some they carried with them into "Gaul."—*Saxon Chronicle.*

I am inclined, however, to think that the treasure recently discovered at Walmersley may have been deposited in the earth during the troubles attendant upon the usurpation of

Carausius, the admiral of the Roman fleet stationed to protect the coasts of Britain from the ravages of Saxon pirates. The coins I have enumerated do not extend over a period of fifty years; and the most numerous and most recent are those of Carausius and Maximianus. The former was slain, after usurping the imperial authority in Britain for six years, by his lieutenant Allectus, who continued the usurpation about three years longer, when he succumbed to the emperors Diocletian and Maximianus. During this period, many parties would become obnoxious to the imperial authority, and, like their successors about the year 418, would seek safety by flight.

A few of the coins of the reigns of Tacitus, Probus, Maximianus and Carausius are base, being formed of bronze and afterwards silver plated—a practice sometimes adopted, even by the imperial government, during troubled periods like the one referred to.

PROCEEDINGS,

EIGHTEENTH SESSION, 1865-66.

ANNUAL GENERAL MEETING,

Free Public Library, Liverpool, 18th October, 1865,

REV. A. HUME, D.C.L., V.P., IN THE CHAIR.

The SECRETARY read the following

REPORT.

Owing to exceptional circumstances, the labours of the Society during the past Session have occupied a longer period than usual, but the business transacted has been of the average character. Eighteen meetings were held, between November 1864 and July 1865, at which twenty Papers were read; seventeen of these will be printed among the Transactions in the forthcoming volume; a condensed report of two others will be found in the Proceedings, and, for special reasons, the remaining Paper will be printed in the Transactions for the approaching Session.

Volume V, New Series, is in course of printing. As there is no reason to anticipate unusual delay in the work, it is expected to be ready for delivery before the close of the current year; and steps have already been taken with regard to the ensuing volume which will probably enable the new Council to issue it within the next sessional year.

The Library continues to increase, principally by means of exchange with other Societies; but the accessions to the Museum during the past year have been few and inconsiderable. The routine business has been transacted as usual, the only extra expense incurred being for the services of a special reporter. Numerically the Society remains at about the same strength as for some time past.

On three special occasions the members have enjoyed the pleasure of social as well as intellectual intercourse with their friends. In the first instance, by invitation of Mr. Mayer, a large gathering was held in April last at his Museum of British and Foreign Antiquities; a similar meeting, in the large lecture-room of the Free Public Library, was held in July, on which occasion a service of plate, accompanied with an illuminated address, was presented as a testimonial to the Rev. Dr.

Hume on his retirement from the office of Honorary Secretary; and the Annual Excursion, made this year to Hawarden Castle, also in July, was numerously attended.

Agreeably to the Laws, the Council submit the names of gentlemen to fill the offices of a Vice-President and of Sectional Members of the new Council.

Comparative Account of the Numerical Strength of the Society.

	Life.	Resident.	Non-Resident.	Lady Associates.	Total.	Honorary Members.	Gross Total.
Session XVI	54	182	148	2	386	23	409
„ XVII — Died or Resigned	6	16	6	..	28	..	28
	48	166	142	2	358	23	381
New Members	0	14	3	..	17	..	17
Totals	48	180	145	2	375	23	398

It was moved by William Burke Esq., seconded by Thomas Sansom Esq., F.B.S.E., and resolved unanimously :—

That the Report now read be adopted, and printed and circulated with the Proceedings of the Society.

It was moved by William H. Grimmer Esq., seconded by Thomas Brakell Esq., and resolved unanimously :—

That the thanks of the Society be given to the Officers and Sectional Members of the Council for their services during the past Session.

It was moved by Nicholas Waterhouse Esq., seconded by E. F. Evans Esq., and resolved unanimously :—

That the thanks of the Society be given to Joseph Mayer Esq., for his reception of the members and their friends at his Museum of British and Foreign Antiquities on the 6th of April; and to Sir Stephen R. Glynne, Bart., for his kindness in throwing open the grounds and ancient Castle of Hawarden on the summer excursion of the members and their friends on the 28th of July last.

A ballot having been taken for the Officers and Sectional Members of the Council, the result was announced from the Chair. (See page iv.)

Thanks were voted by acclamation to the Chairman for his services during the evening, and the proceedings terminated.

At the Annual General Meeting held on the 18th of October, 1866, Thomas Dawson Esq., in the Chair, the Treasurer's Statement of Accounts for Session XVII was read as follows :—

The Historic Society of Lancashire and Cheshire *in Account with*
William Burke, *Treasurer.*

Dr.

				£	s.	d.
I. The Volumes :—						
Delivery of Vol. V, N.S..	£5	19	2			
Printing and binding do..	104	6	9			
Illustrations to ditto	16	14	0			
				126	19	11
II. Sessional Expenses :—						
Printing Circulars &c. ..	9	5	0			
Stationery	2	9	0			
Postage Stamps	11	1	8			
Refreshments.....	9	17	0			
Advertisements, delivery of Circulars, Messages, Parcels & Miscellaneous	14	15	2			
Insurance.....	1	10	0			
Commission to Collector..	5	1	4			
Assistant Secretary	50	0	0			
				103	19	2
III. Permanent Investments :—						
Objects for Museum	0	2	6			
Gore's Directory	0	9	6			
				0	12	0
IV. Special Expenses :—						
Receipt Books for Treasurer	2	4	0			
				2	4	0
Balance carried down				12	12	5
				£246	7	6

Cr.

	£	s.	d.
By Balance from last Account, Session XVI	23	13	8
„ Receipts in Session XVII, viz.:—			
Arrears	27	16	6
Entrance Fees, Session XVII ..	6	6	0
Annual Subscriptions, ditto	168	10	6
Ditto in advance, Session XVIII	5	15	6
Life Compositions	10	10	0
Books and book covers sold	3	15	4
	£246	7	6

Examined and found correct,

By Balance brought down £12 12 5

Peter R. M'Quie, *Auditor.*

Liverpool, 16*th October,* 1866.

E. & O. E.

William Burke, *Treasurer.*

It was moved by Nicholas Waterhouse Esq., seconded by David Buxton Esq., F.R.S.L., and resolved unanimously :—

That the Treasurer's Statement of Accounts for Session XVII, 1864-65, now presented, be passed and printed and circulated with the Proceedings of the Society.

2nd November, 1865. ARCHÆOLOGICAL SECTION.

Thomas Sansom Esq., F.B.S.E., in the Chair.

Mr. Francis James Bailey, M.R.C.S., Grove Street, was duly elected an ordinary member of the Society.

The following donations were presented :—

From the Society of Antiquaries.

1. Archæologia, vol. xxxix, part 2.
2. Proceedings, vol. ii, No. 5.

From the Author.

1. La Grandezza Italiana studi confronti e desiderii di Negri Cristoforo.
2. Memorie Storico-politiche sugli Antichi Greci e Romani di Cristoforo Negri.

From Signore Cristoforo Negri.

La Repubblica di Venezia e la Persia, per Guglielmo Berchet.

From W. Shorrock Ashton Esq.

Numerous interesting sepulchral remains lately discovered on his property at Over Darwen, Lancashire, consisting of fragments of cinerary urns with cremated bones &c.

The following objects were exhibited :—

By the Rev. Dr. Hume, V.P.

The Formby ffifteen Booke, made the twenty-third day of Jully in Anno R. R. Car$^{i.}$ Sec$^{i.}$ Tricessimo primo : Anno Dom$^{i.}$ 1679.

By Mr. Thomas Dawson.

1. An illustrated copy of "Fables by the late Mr. Gay," Liverpool, 1754.
2. Copy of the first Liverpool pocket-book, 1753.
3. The kingdome of England and principality of Wales, in six mappes, 1644.

By Mr. Benas.

A set of American national bank-notes of from one dollar to fifty.

By Mr. H. Ecroyd Smith.

1. Two coins lately discovered by himself, viz., a second brass of Claudius Cæsar, found among "Meols stocks," the stumps of the ancient forest trees of Wirral, and a shilling of Queen Elizabeth (1587), picked up on Craig-y-Fodwen, Wales.
2. A curious royalist badge of the seventeenth century, consisting of a rich silken scarf with the following rhymed motto interwoven :—

"God bless the prince,
"May he be king;
"And let the rumps
"In halters swing."

The design of this sash, which is eight feet long and an inch and a half broad, is of tartan and apparently approaches as nearly to the Royal Stewart pattern as its width will allow. The rump parliament sitting from 1648 until its dissolution by Cromwell on the 20th of April, 1653, the date of this royalist emblem is nearly fixed.

The following Paper was read:—

On Ancient British Remains at Over Darwen,* *by Charles Hardwick, Esq.*

After the reading of the above-named Paper it was moved by John G. Jacob Esq., seconded by H. E. Smith Esq., and resolved unanimously—

That the cordial thanks of the meeting be given to Wm. Shorrock Ashton Esq. for his kindness in presenting to this Society the interesting ancient sepulchral remains lately discovered on his property; and to Charles Hardwick Esq. for his valuable communication.

9th November, 1865. LITERARY SECTION.

Peter R. M'Quie Esq. in the Chair.

The following donations were presented:—

From the Statistical Society.

Journal, vol. xxviii, parts 1 and 2.

From Mr. C. Roach Smith.

Onzième Exposition de la Société d'Horticulture de l'Allier.

From the Committee of the Birkenhead Free Public Library.

Ninth Annual Report, May 1865.

The following objects were exhibited—

By the Rev. Dr. Hume, V.P.

1. A specimen of peat bog compressed to about one-fourth of its ordinary volume for the purpose of fuel. Its heating power in this state is about six-tenths of the power of Wigan coal.
2. A paper dated 6th Edw. VI, copied from the original in the British Museum referring to the identification of a piece of waste ground near Chester.

By Mr. Buxton.

1. A copy of the Prayer-book of the American Episcopal Church.
2. A Latin copy of the Book of Common Prayer of the English Church, published in 1713, additionally remarkable as containing two services not found in the present Prayer book, viz., a form of prayer to be used at meetings of Convocation and one on the application of the royal touch for king's evil.

By Mr. Waterhouse.

La Gasetta Romonscha, a newspaper of four small folio pages published in one of the valleys of the Vorder Rhein. The language used is a remarkable mixture of German and Latin, the latter being apparently its basis, a fact which seems to indicate the Cisalpine origin of the inhabitants.

* Transactions, p. 273.

The following Paper was read:—

Further Remarks on the Alleged Submarine Forests on the Shores of Liverpool Bay and the River Mersey,* *by Joseph Boult Esq.*

16*th November*, 1865. SCIENTIFIC SECTION.

John A. Tinne Esq., F.R.G.S., V.P., in the Chair.

The following donations were presented:—

From the Royal Society.
Proceedings, vol. xiv, Nos. 74 to 77.

From the Royal Geographical Society.
Journal, vol. xxxiv for 1864.

From the late M. de Perthes.
Antiquités Celtiques et Antédiluviennes, tome iii.

From Mr. Dawson.
A coloured view of Dale Street, Liverpool, in 1850.

From W. S. Ashton Esq., Over Darwen.
A small urn of the British period, nearly perfect, with its original contents of charcoal and cremated bones, recently found on the donor's property at Over Darwen; being a further contribution in illustration of Mr. Hardwick's paper read on the 2nd instant.

The following objects were exhibited:—

By the Rev. Dr. Hume.

1. Some bones, supposed to be of *bos longifrons*, recently turned up near Hoylake.
2. A cloak, made from the intestines of a whale, by an Esquimaux woman.

Mr. Greenwood called attention to the rapid disappearance of many interesting buildings in Liverpool, owing to the numerous improvements in progress, and pointed out the desirableness of making a systematic attempt to preserve, by means of photography, representations of parts of the town presenting features of interest.

It was moved by the Rev. Dr. Hume, V.P., seconded by Mr. Greenwood, and resolved—

That the Photographic Committee of the Society be requested to enquire and report as to the best means of carrying this purpose into effect.

The following Paper was read:—

The State of the Lancashire and Cheshire Sea-Coast, with reference to (1) the Submarine Forest, (2) the Submerged Burying-Ground and (3) an Eruption of Water &c. from Chat Moss in the Sixteenth Century,† *by the Rev. A. Hume, D.C.L., V.P.*

* Transactions, p. 89. † Transactions, p. 1.

7th December, 1865. ARCHÆOLOGICAL SECTION.

THOMAS DAWSON Esq., M.R.C.S., in the Chair.

The following gentlemen were duly elected ordinary members of the Society:—

William Critchley, 119, London Road and 2, Edge Lane.
Richard Henry Wood, F.S.A., Crumpsall, Manchester.
Henry Miller, 109, Upper Hill Street.

The following donations were presented:—

From the Archæological &c. Society of Somersetshire.

Proceedings, vol. xii.

From the Société Impériale d'Emulation d'Abbeville.

Mémoires 1861—1865.

From the Author.

On the Alleged Submarine Forests on the Shores of Liverpool Bay and the River Mersey; a Communication to the Polytechnic Society of Liverpool, 10th April, 1865, by Jos. Boult, F.R.I.B.A.

From Dr. Kendrick, Warrington.

An oil-painting of Moor Street, Liverpool, as it existed about forty years since.

The following objects were exhibited:—

By the Chairman.

Poesie del Magnifico Lorenzo de' Medici tratte da testi a penna della Libreria Mediceo Laurenziana, e finora inedite, 1791. Only twelve copies were printed, and these were distributed by the Editor, William Roscoe, among his literary friends.

By Mr. McQuie.

1. Letters of Samuel Derrick, Master of the Ceremonies at Bath, some of them written from "Leverpoole," 1767.
2. The Volunteer and Intelligent Soldier's Companion. Edinburgh, 1803.

The following Paper was read:—

A COMPARISON OF THE DIFFERENT ROUTES PROPOSED FOR AN ATLANTIC SUBMARINE TELEGRAPH, *by J. T. Towson, F.R.G.S.*

14th December, 1865. MISCELLANEOUS MEETING.

WILLIAM BURKE Esq., Treasurer, in the Chair.

Mr. Louis Cohen, 44, Ranelagh Street, was duly elected an ordinary member of the Society.

The following donations were presented :—

From the Secretary of the Treasury of the United States, through the Smithsonian Institution.
Statistics of the Foreign and Domestic Commerce of the United States, 1863.

From the Birkenhead Literary and Philosophical Society.
Proceedings, Session viii, 1864-65.

From the Royal Cornwall Polytechnic Society.
Thirty-second Annual Report, 1864.

The following Paper was read :—

On the present state of the Science of Photography and its Relations to Art, *by Mr. J. A. Forrest.*

21*st December*, 1865. SCIENTIFIC SECTION.

T. T. Wilkinson Esq., F.R.A.S., in the Chair.

The following donations were presented :—

From the Royal Astronomical Society.
Memoirs, vol. xxxviii.

From the Royal Society of Edinburgh.
1. Transactions, vol. xxiii, part 3.
2. Proceedings, 1863-64.

From the Smithsonian Institution.
Results of the Meteorological Observations made under the direction of the United States Patent Office and the Smithsonian Institution from 1854 to 1859 inclusive, vol. ii, part 1.

From the Chairman.
1. The Lady's and Gentleman's Diary for 1866.
2. Wot aw seed ut th' Preston Eggsibishun. Bi Dick and Betty Moudywarp. 1865.

The following objects were exhibited :—

By the Chairman.
A rare volume of mathematics and astrology published early in the last century, by Charles Leadbetter, a Lancashire mathematician.

The following Paper was read :—

On the present extent of the Telegraph in the different Countries of the World; with a comparison between the charges to the public and the press for messages and public intelligence in the United Kingdom and in other countries; and also as to the rapidity and accuracy of communication, *by Edward B. Bright, C.E., F.R.A.S.*

4th January, 1866. ARCHÆOLOGICAL SECTION.

William Mathison Esq. in the Chair.

The following donations were presented:—

From the Société d' Emulation du Département de l' Allier.
Bulletins, vols. 1 to 11.

From the Author.
La Storia Antica Restituita a Verità e Raffrontata alla Moderna dal Commendatore Negri Cristoforo.

The following objects were exhibited:—

By Mr. Waterhouse.
Reprints of *The Commonwealth Mercury*, containing the official account of the death and lying in state of Oliver Cromwell, 1658, and various other similar reprints.

By Captain Aitkin, of Bacup, and Mr. Hartley and Mr. Edmondson, of Bury.
Various objects illustrative of Mr. Hardwick's Paper descriptive of the discovery of a Roman hoard in East Lancashire.

By Mr. H. Ecroyd Smith, in illustration of his Paper.
1. A collection of Roman and other relics of Verteræ (Brough in Westmoreland) including coins, personal ornaments and horse trappings, with rare seals in pewter of a kind only found at this Roman station, accompanied by lithographs of others lately found at the bottom of the river Bug in Lithuania.
2. A sketch of a very singular primeval object formed out of lias, use unknown, lately discovered on the sea-beach of Devon.

The following Papers were read:—

1. Account of a Roman hoard in East Lancashire,* *by Charles Hardwick Esq.*; and
2. Notices of a Roman Station at Brough in Westmoreland,† *by Mr. H. Ecroyd Smith.*

11*th January*, 1866. LITERARY SECTION.

William Burke Esq., Treasurer, in the Chair.

The following gentlemen were duly elected ordinary members of the Society:—

D. Maneckjee Lalcaca, Maudsley Buildings, Castle Street.
James Powell Wright, 23, York Terrace.

The following donations were presented:—

From the Royal Asiatic Society.
Journal, New Series, vol. i, part 2.

* Transactions, p. 278. † *Ibid*, p. 137.

From the Royal Irish Academy.

Proceedings, volumes vii and viii, and vol. ix, part 1.

From the Royal Institution of Cornwall.

Journal, No. iv, October, 1865.

The following Paper was read:—

On the Capabilities of the English Language, *by the Rev. A. Hume, D.C.L., V.P.*

18*th January*, 1866. SCIENTIFIC SECTION.

J. T. Towson Esq., F.R.G.S., in the Chair.

Mr. Richard Holden, Grecian Chambers, 57, Dale Street, was duly elected an ordinary member of the Society.

The following donations were presented:—

From the Royal Geographical Society.
Proceedings, vol. ix, No. 6, and vol. x, No. 1.

From the Geological Society.
Quarterly Journals, Nos. 83 and 84.

The following Paper was read:—

On the Aquatic Plants of Great Britain, with Illustrative Specimens, *by Thomas Gibson Esq.*

1*st February*, 1866. ARCHÆOLOGICAL SECTION.

Thomas Sansom Esq., F.B.S.E., in the Chair.

The following donations were presented:—

From the Sussex Archæological Society.
Collections, vol. xvii.

From the Manchester Numismatic Society.
Transactions, part ii.

From the Cambridge Antiquarian Society.
Report and Communications, No. xiv.

From the Editor.
The Reliquary, No. 20, vol. v, April, 1865.

The following objects were exhibited:—

By Mr. T. Dawson.
A collection of the Autographs of persons locally eminent.

By Mr. T. J. Moore.

A series of diagrams of Fungi, drawn and coloured by the Rev. Henry H. Higgins.

The Secretary read a communication from the Dean of Westminster, requesting the support of this Society in a movement for the restoration of the Chapter House at Westminster, especially with reference to the intention to bring the matter under the notice of the Government by a deputation to the Chancellor of the Exchequer.

It was moved by JOHN G. JACOB Esq., seconded by JOHN DAVIES Jun., Esq., and resolved unanimously,

> That this Society regrets that nothing has been done to repair the Chapter House at Westminster, and anxiously desires to impress upon Her Majesty's Government and upon both Houses of Parliament the desirableness of restoring that edifice without delay to its architectural beauty.

The following Paper was read:—

ON THE MICROSCOPIC FUNGI OF THE LIVERPOOL DISTRICT,* *by R. G. McLeod, Esq.*

8th February, 1866. LITERARY SECTION.

WILLIAM BURKE Esq., Treasurer, in the Chair.

The following donations were presented:—

From the Royal Society.
Proceedings, vol. xiv, Nos. 78 to 80.

From the Statistical Society.
Journal, vol. xxviii, part 3.

From the Royal Irish Academy.
Transactions (Polite Literature), part ii.

Mr. H. Ecroyd Smith exhibited a copy of an early Scottish ballad called "The Vision: compylit in Latin be a most lernit Clerk, in "time of our Hairship and Oppression, anno 1300, and translatit "in 1524; printed in the year 1748."

The following Paper was read:—

THE ALLEGORY OF SHAKSPEARE'S TEMPEST, *by B. L. Benas, Esq.*

15th February, 1866. SCIENTIFIC SECTION.

THOMAS DAWSON Esq., M.R.C.S., in the Chair.

The following donations were presented:—

From the Royal Geological Society of Ireland.
Journal, vol. i, part 1.

* Transactions, p. 127.

From the Royal Irish Academy.
Transactions (Science), parts 4 to 6.

The following objects were exhibited:—

By the Chairman.
Various books published in Liverpool and some news-letters of the era of the Great Rebellion.

By Mr. Thomas Gibson.
Numerous specimens of bismuth and other metals.

By Mr. Rundell.
A great variety of steel plates prepared by the Bessemer process, procured from the works of the Liverpool ship-building company.

By Mr. Hughes.
Specimens of manufactured iron, in illustration of his Paper.

The following Paper was read:—

'On some of the processes in the Manufacture of Iron, *by John R. Hughes Esq.*

1*st March*, 1866. ARCHÆOLOGICAL SECTION.

James Stonehouse Esq. in the Chair.

Mr. Samuel Barrow, 323, Vauxhall Road, was duly elected an ordinary member of the Society.

The following donations were presented:—

From the Surrey Archæological Society.
Collections, vol. iii.

From the Author.
1. The present and past rates of freight to London and Liverpool from the South Staffordshire iron district, and
2. Self Help. By Samuel Hill.

From the Vancouver Exploration Committee.
Report, 1864.

From the Author.
Collections for a Genealogical Account of the Family of Comberbach, by George W. Marshall, LL.B.

From the Author.
Y^e^ Legende of ye Prehistoric Manne of Cheshire.

The following objects were exhibited:—

By Mr. H. Ecroyd Smith.
1. An engraved copy of the front and back of a powder-flask bearing the date 1511, and said to have been presented by Henry VIII to Hardres of Hardres Court, Kent.

2. Coloured drawings of an enamelled Turkish powder-flask of the fifteenth century.

The following Paper was read:—

The Primeval Antiquities of Furness and Cartmel, *by Henry Barber, M.D.*

8th March, 1866. LITERARY SECTION.

Rev. A. Hume, D.C.L., Vice-President, in the Chair.

Mr. James P. Bath, Garston, was duly elected an ordinary member of the Society.

The following donations were presented:—

From the Archæological Society of London and Middlesex.
Transactions, vol. ii, part 6.

From the Archæological Society of Norfolk and Norwich.
Original Papers, vol. vii, part 1.

From the Société Archéologique de l'Orléanais.
Bulletins, Nos. 47, 48, 49; 1865-66.

In illustration of his Paper Mr. Ecroyd Smith exhibited numerous specimens of forest remains found at the spot described by him, with drawings showing its present aspect.

The following Paper was read:—

Notice of a remarkable Dislocation of the Soil resulting from the Construction of converging Lines of Railway by Rimrose Brook, Bootle,* *by Mr. Henry Ecroyd Smith.*

15th March, 1866. SCIENTIFIC SECTION.

Rev. Richard R. Moore, M.A., in the Chair.

The following donations were presented:—

From the Royal Society.
Proceedings, vol. xv, No. 81.

From the Kilkenny and South East of Ireland Archæological Society.
Proceedings and Papers, vol. iv, No. 45, and vol. v, Nos. 46 to 49.

From the Author.
Suggestions for a New System of Chemical Nomenclature, by George Hamilton, F.C.S., F.R.A.S., Professor of Chemistry, Queen's College, Liverpool.

From the Editor.
The Reliquary, vol. vi, No. 23.

* Transactions, p. 267.

The following objects were exhibited:—

By the Rev. Dr. Hume, V.P.

1. A wooden ball, hollowed and fitted with a stopper, and
2. A ladle of the same material, coloured and carved; both brought from West Africa.

By Mr. Burke, Treasurer.

An original pen and ink portrait of Lord Nelson, taken on board the *Victory* on the morning of the 21st October, 1805.

By Mr. F. J. Jeffery.

An almost complete series of English Coins from 1504 to 1656, in illustration of his paper.

The following Papers were read:—

1. An Original Letter, referring to the Pretender's march into England in 1745,* *contributed by General the Hon. Sir Edward Cust, K.C.H.;* and

2. On the Numismatic History of England from 1066 to the present time, Part II,† *by F. J. Jeffery Esq., F.G.H.S.*

19*th April*, 1866. SCIENTIFIC SECTION.

David Buxton Esq., F.R.S.L., in the Chair.

The following donations were presented:—

From the Geological Society of London.

Quarterly Journal, vol. xxii, No. 85.
List of Members, 1865.

From the Royal Dublin Society.

Journal No. xxxiv, December, 1865.

From the Liverpool Chemists' Association.

Laws &c., and Seventh Annual Report, Session 1864-65.

From the Liverpool Polytechnic Society.

Journal, 29th Session, 3rd Meeting, March 10, 1866.

The following objects were exhibited:—

By the Rev. Dr. Hume, V.P.

A primitive harp from Western Africa, resembling those used by the Ancient Egyptians and Hebrews.

By Mr. T. J. Moore.

1. Various bones recently found on the Cheshire Shore.
2. The skull of a whale, also found in the same locality.
3. A great number of birds from Central Africa.

* Transactions p. 271. † *Ibid*, p. 175.

The following Papers were read:—

1. On the Skull of a Whale and other Bones found at Leasowe; and

2. On an Extensive Collection of Birds made during the Dutch Ladies' Expedition into Central Africa and recently presented by John A. Tinne Esq. to the Free Public Museum; *by Thomas J. Moore Esq.**

3rd May, 1866. ARCHÆOLOGICAL SECTION.

J. T. Towson Esq., F.R.G.S., in the Chair.

The following donations were presented:—

From the Royal Irish Academy.

Transactions, vol. iv, Antiquities, parts 2, 3 and 4.

From the Leicestershire Architectural and Archæological Society.
Transactions, vol. i, part 4.

From the Author.

Fallacies and incorrect statements on the subject of the Local Submarine Forest; their Exposure and Correction. (Read before the Liverpool Polytechnic Society, 12th March, 1866, in reply to the Paper by Joseph Boult Esq., read 10th April, 1865.) By the Rev. A. Hume, D.C.L., F.S.A., author of *Ancient Meols, or some account of the Antiquities found at Dove Point on the sea-coast of Cheshire.*

The following objects were exhibited:—

By the Chairman.

Specimens of some rare fern allies found in various parts of the kingdom.

By Mr. Burke.

1. A small box made from the betel-nut tree.

2. Bangles made from the Ganges weed, and covered with tinsel ornaments, as worn by low caste Hindoo women.

By Mr. H. Ecroyd Smith.

A numerous collection of specimens of natural history and archæological remains, in illustration of his Paper.

The following Paper was read:—

Notabilia of the Archæology and Natural History of the Mersey District during the years 1863-4-5,† *by Mr. Henry Ecroyd Smith.*

* These two Papers will be published in vol. vii, N.S. *See* Explanatory Note at the beginning of this volume.

† Transactions, p. 195.

10*th May*, 1866. LITERARY SECTION.

HENRY ECROYD SMITH Esq. in the Chair.

The following donations were presented:—

From the Literary and Philosophical Society of Liverpool.
Proceedings, vol. xix.

From the Royal Society.
Proceedings, vol. xv, No. 83.

From the Statistical Society.
Journal, vol. xxix, part 1.

From the Society of Arts.
Journal, Nos. 691 to 702.

From the Société d' Histoire et d' Archéologie de Genève.
Mémoires et Documents, Tome xvi, Livraison 1.

The following objects were exhibited:—

By Mr. A. Craig Gibson.

1. An ancient silver peg-tankard.
2. Numerous photographic views of scenery in the lake district.
3. Views in sepia illustrative of the scenery of Hawkshead parish.
4. A Relation of a Iourney begun An. Dom. 1610, in Fovre Bookes containing a description of the Turkish Empire, of Ægypt, of the Holy Land, of the Remote Parts of Italy, and Ilands adioyning. The fourth edition. London—printed for Andrew Crooke 1637.

The following Paper was read:—

THE LAKELAND OF LANCASHIRE, PART II,—THE PARISH OF HAWKSHEAD,* *by A. C. Gibson, F.S.A., Honorary Curator.*

* Transactions, p. 153.

14*th Juue*, 1866. MISCELLANEOUS MEETING.

JOSEPH MAYER Esq., F.S.A. &c. in the Chair.

By invitation of the proprietor, a MISCELLANEOUS MEETING was held in Mr. Mayer's Museum of British and Foreign Antiquities at Seven p.m. on the above date, and numerously attended by members and their friends. After passing through the various apartments the visitors assembled in the principal room, when the Rev. Dr. Hume, Vice-President of the Society, read a Paper "On the Congrès Scientifique "de France compared with the British Association for the Advancement "of Science," which was followed by a Paper "On the Poet of the "Christian Year," by David Buxton Esq., F.R.S.L., Honorary Librarian.

Thanks were voted by acclamation to the Authors of the Papers and to Mr. Mayer for his kind reception of the members and their friends.

ANNUAL EXCURSION.

The Society's Summer Excursion was made on the 14th of July, 1866, to Haddon Hall and Chatsworth, Derbyshire, and was attended by about a hundred and forty of the members and their friends. The day was remarkably fine and the long journey was made without misadventure, except that, on returning, some delay took place owing to the crowded state of the railroad in the neighbourhood of Manchester.

The arrangements enabled the whole party to visit both the places named, allowing also time for dinner while at Haddon and for tea after leaving Chatsworth, in the village school rooms at Beeley, about a mile from the railway station, which were hospitably placed at the disposal of the party by the rector, the Rev. Henry C. Sculthorpe, through whose kind co-operation, with that of Mrs. Sculthorpe, this part of the day's arrangements was very successfully carried out.

ERRATA.

Page 197, line 27, *dele* "the late."

„ 215, „ 19, *for* Ethelbert *read* Ethelred.

Members (only) can now be supplied with copies of former Volumes, at the following prices:—

Vols. I to VI, *First Series*, ...	£0	15	0
„ VII to XII, *ditto*, ...	1	5	0
„ I to V, *New Series*, ... each	0	7	6

Volume III (*First Series*) cannot be sold separately.

INDEX.

A

Æcidiacei, list of, 130.
Aglionby, fanciful origin of the name, 168.
Ainslie, Mr., 173.
Aitkin, Capt., 291.
Allegory of Shakspeare's Tempest, 293.
Amabella de Lathom, seal of, found on the Cheshire shore, 55.
Ambleside bobbin-mill, 169.
Amulets found at Brough, 146.
Ancient British Remains at Over Darwen, 273, 287.
Ancient Burying Ground at Leasowe, 36.
Ancient forests of Lancashire, 5; their extent, 6.
Ancient Meols, 1, 323.
Animal remains found on the Cheshire shore, 224.
Anne, queen, coins of, 188; complaints respecting, 189; her modesty, *ib.*
Annual Excursion, 299.
Annual General Meeting, 283.
Antiquities found on the Cheshire shore, 51, 55.
Aquatic Plants of Great Britain, 292.
Ashton, W. Shorrock Esq., 273, 286, 287, 288.

B

Bailey, F. J., 285.
Baines's "Lancashire" quoted, 16, 96; as to kinds of trees growing in mosses, 97.
Balance Sheet, 1864-65, 285.
Barber, H., 295.
Barclay, Thomas, on the wasting of the Cheshire shore, 59, 63, 110.
Barrow, S., 294.
Beamont's *Domesday book*, 5 *n.*
Belleisle, on Windermere, siege of, 162.
Benas, B. L., 286, 293.
Bidston marsh described, 18, 99; remarks on the peat of, 122.
Birkenhead Free Public Library Committee, 287.
——— Literary and Philosophical Society, 290.
Blomaries, near Cunsey, suppressed by Queen Elizabeth, 169.
Blundell of Crosby, former possessions of, 25.
Bogs, 22.
Bootle, dangerous sands at, 269.
Bos Longifrons, skull of, 213.
Boult, Mr. J., 89, 288, paper by, *cited*, 2; analysis of, *ib.*; *quoted*, 3, 4, *notes*; on mosses, 26; as to ancient burying ground at Leasowe, 37, 92; as to wasting of Cheshire sea coast, 56; his theory as to Chat Moss, 63; former papers by, on the Lancashire and Cheshire sea coast, enumerated, 90; general statement of his views, 91; mentioned, 288, 289.
Braithwaite, Philip, account of, 165.
Braithwaite, William, endows Sawrey school, 165.
Brathay hall, account of, quoted, 157.
Bright, E. B., 290.
"Broad pieces" forbidden, 190.
Bronze coinage, 193.
Brough-under-Stainmoor, the *Verteræ* of the Roman *Itinera*, 137; ancient remains near, 138; Roman camps near, 139; tumuli near, 141; Brough almost unregarded by Leland, 141; notices of quoted from Burton, 142; from Mr. Clayton, *ib.*; from Mr. C. R. Smith, 143; present aspect of, *ib.*; Castle, 144; coins and other remains found, 145; synopsis of Brough relics, 146.
Burbo bank, notice of, 120.
Burke, W., 285, 289, 291, 293, 296, 297.
Burton, his account of *Verteræ*, 142.
Burying Ground, Ancient, at Leasowe, 36, 92; traditions respecting, 43.
Buxton, D., 287, 296, 299.
Byssini, list of, 135.

C

Cæomacei, list of, 132, 135, 136.
Cambridge Antiquarian Society, 292.
Capabilities of the English Language, 292.
"Castle's Brass," 144.
Changes in the Sea Coast of Lancashire and Cheshire, 1, 288.
Chapman, Mr., his section of the Cheshire sea coast, 56.
Charles I, coins of, 181; debases the coinage, *ib.*
Charles II, coins of, 185.
Char, the, notice of, 155; "clicking" char, anecdote respecting, 156.
Chat Moss, eruptions, 3; subterranean trees of, 10; Mr. Boult's theory examined, 63; eruption, 70; extent of, 52, 97; quotations respecting from Leland and Baines, 96; drainage of, 97; growth of trees in, *ib.*
Chatsworth, 299.
Cheshire, Sea coast of, 2; forests of, 7, 10; submarine forests of, 15; sands of, 27; star-grass, 29; burial ground at Leasowe, 2; Swire and Hutchins's map of Cheshire, notice of, 18.
Cheshire Sea coast. (See also "Leasowe.") Burying ground on, 2, 63; forests, 7, 10, 15; sands, 27; star-grass, 29; ancient burying ground, 36; tombstones, 44, 108; church, 44, 94; antiquities, 51, 55; limits of, 56; extent of inroads by the sea, 56, 109; sections of, 46, 47, 49, 54, 56; wells, 60; race-course, *ib.*; old lighthouse, 62; general remarks on, 104; Mr. Rollett's opinion on the erosion of, 111; Lieut. Parkes's survey, 112; increased deposit on, *ib.*; recent archæological products of, 203; strata of, 204.
Chester bar, change in, 113.
Clayton, Mr. J., observations of on Brough-under-Stainmoor, 142.
"Clicking," legal definition of, 156.
Coffin, a, dug up in Merionethshire, 10.
Cohen, L., 289.
Coinage, change in, 179.
Coins &c., found at Brough, 144, 146; at Otterspool, 197, 199.
Coins.—II. Gothic or Tudor, 175; crowns, 177; base coins, *ib.*; harp first used on Irish, *ib.*; forged, *ib.*; date first struck on, 178; sovereigns, 178, 179; copper, 179; mill and screw introduced, *ib.*; value of gold, 180; weights, *ib.*; "siege pieces," 181; clipping, 182, 187; Commonwealth, 182; Cromwell's, 183.
III. Simonian, 183; petition crown, 185; change in style, 186; gun-money, 186; mint marks on, 188; experiment in, *ib.*; "Vigo," *ib.*; broad pieces, 190; last new, 191; Australian, 194.
Commonwealth, coins of the, 182.
Comparative account of the numerical strength of the Society, 284.
Comparison of the different Routes proposed for an Atlantic Submarine Telegraph, 289.
Coode, Mr., on the wasting of the Cheshire shore, 57, 111.
Cook, Mr. M. C., his book on the micro-fungi noticed, 127.
Copper currency, first, 186.
"Crier of Claife," the, legend of, 159.
Critchley, W., 289.
Cromwell, coins of, 183.

Culter excoriatorius, 289.
Culter secespita, 207.
Cunningham, Mr., his section of the Cheshire sea coast, 47; thickness of strata, 119.
Cunsey, woods of, 169.
Currency, inferior, clamour against, 190.
Curwen family, notice of, 161.
Cust, Hon. Sir E., 271, 296.

D

Darwen, Over, ancient British remains described, 273.
Davies, J., 293.
Dawson, T., 286, 288, 289, 292, 293, 294.
Dee, delta of the, 115.
Denham's Mersey and Dee, 113.
De Perthes, the late J. B., 288.
Discovery of a Roman hoard in East Lancashire, 279, 291.
Domesday Book, 5.
Domestic implements found at Brough, 147.
Dove spit, change in, 116.

E

Edinburgh, last coins struck in, 189.
Edmondson, Mr., 291.
Edward VI, coins of, 178.
Edwards, Dr., on the Cheshire sea coast, 50.
Eels, former abundance of at Leasowe, 17.
Elizabeth, queen, coins of, 178.
Elterwater, account of, 154.
Equestrian figure found on the Cheshire shore, 219.
Erysiphei, list of, 134.
Esthwaite hall, the birthplace of Archbishop Sandys, 167.
Ethelwerd's Chronicle quoted, 281.
Eyes, Mr. E., on the Cheshire shore, 117.

F

Ferry hotel, Windermere, sad anecdote in connection with, 163.
Fires, story of two, 173.
Fir trees grow in bog, 23.
Florin, the, 193.
Forests of South Lancashire, 5; subterranean, 8; submarine, 15; classified, 18.
Formby Sea coast, 29, 32, 35; old churchyard, 74; disappearance of the village, 75; former condition of the country, 76; "Fifteene Booke," 78; personal names noticed, 80; names of places, 82; directory, 83.
Forrest, J. A., 290.
Fungi assigned as the cause of the potato-disease, 129; the assertion questioned, *ib.*
Further Observations on the Alleged Submarine forests on the Shores of Liverpool Bay and the River Mersey, 89, 288. (See also, "Boult, Mr. J.," "Lancashire," "Cheshire" and "Leasowe" respectively.)

G

Gastrell, Bishop, his *Notitia*, 44.
Geological Society, 292, 296.
George I, coins of, 189.
——— II, coins of, 190.
——— III, coins of, 190; buys the sovereignty of the isle of Man, 191.
——— IV, coins of, 192.
Gibson, A. Craig, 153, 298.
Gibson, T. 292, 294.
Glass bead, 210.
Gold from Guinea, 185.
Gravestones on the Cheshire sea coast, 44; 108.
Graythwaite hall, notice of, 171.
Greenough, Mr., his geological map of England, 8.
Green, W., his illustrations and "Guide to the "Lakes," noticed, 157.
Greenwood, H., 288.
Gregson's Fragments, 80, *n.*
Greta bridge, Roman camp near, noticed, 138.
Grizedale, 173.
Gun-money, 186.

H

Halsall, subterranean forest at, 11.
Hamilton G., 295.
Hammered Money, 187.
Hardwick, Charles, 273, 279, 287, 291.
Harrowslack wood, 163.
Hartley, the late Mr. Jesse, on Leasowe Shore, 43; remarks on his note, 93, 291.
Hawkshead, account of the parish of, 153; homely names of places common in the district, 163.
Helminthosporiaceæ, list of, 134.
Henry VII, coins of, 176.
Henry VIII, coins of, 176; changes his title, 177; base coins of, *ib.*
High Wray, notice of, 159.
Hill, Samuel, 294.
Hoe, meaning of, 28, *n.*
Holden R., 292.
Horse trappings found at Brough, 147.
Hoylake, change in the sea coast at, 29; antiquities found at, 105.
Hoyle lake, changes in, 115, 116.
Hughes, J. R., 294.
Hume, Rev. Dr., 1, 286, 287, 288, 292, 295, 296, 297, 299.

I

Ireland, first copper coin of, 179.
Irish coins, harp first used on, 177.
Ironkeld, prospect from, 154.
Isle of Man, sovereignty of purchased, 191.
Iter Lancastrense, James's, 20, 27; 61, *n.*

J

Jacob, John G., 293.
James I, coins of, 179.
——— II, coins of, 186.
James's *Iter Lancastrense*, 20, 27; 61, *n.*
Jeffery, F. J., 175, 296.
Jewitt, Ll., 292, 295.

K

Kaye, Mr., on the Cheshire sea coast, 18; notice of, 37.
Kendrick, Dr., Roman salt pans discovered by, described, 199; mentioned, 289.
Kilkenny and S. E. of Ireland Archæological Society, 295.

L

Lakeland of Lancashire, The. No. II. Hawkshead Parish, 153, 298.
Lalcaca, D. M., 291.
Lancashire, sea coast of, 2; forests of, 5; mosses of, 25, 97; sands of, 27; star grass, 29; origin of local names, 80, *n.*
Larch, the, qualities of, 161.
Leaden tokens issued, 176.
Leasowe, burial ground at, 2; changes in the sandhills at, 32; the old lighthouses, remains of, *ib.*; ancient burying ground at, 36; church, 44, 94.
Leasowe Castle, furniture in of subterranean oak, 11; its original use, 61.
Leasowe, Sea coast of, 2; forests of, 7, 10; Submarine forest, 15; sands, 27; stargrass, 29; ancient burying ground, 36, 92; antiquities, 51, 55.

Leicestershire Architectural and Archæological Society, 297.
Leigh's Lancashire, 105, *n.*
Leland, John, 20, 70, 96.
Limits of the Cheshire shore, 56; extent of inroads on by the sea, *ib.*, 109; increased deposits left on, 112.
Lincolnshire, Subterranean forests of, 10.
Liverpool, ancient forests round, 6; their extent, 7; turf and moss of, 12; former extent of moss near, 25; earlier maps of, 30; new species of micro-fungi discovered near, 130; archæological objects found near, 195; natural history of the district, 229; Ornithology and Oology, 235; botany, 254; disruption of soil near, 267; system of dock extension questioned, *ib.*
Liverpool Chemists' Association, 296.
Liverpool Courier, extract from, respecting sea encroachment at Leasowe, 36; remarks on, 93.
Liverpool Literary and Philosophical Society, 298.
Liverpool Polytechnic Society, 296.
Lloyd, Charles, notice of, 155.
London and Middlesex Archæological Society, 295.
" Lost Farm, The," 29.

M

McLeod, R. G., 127, 293.
McQuie, P. R., 289.
Maiden Castle, Leland's account of, 140.
Maiden way, the, notice of, 140.
Manchester Numismatic Society, 292.
Marshall, G. W., 294.
Mary, queen, coins of, 178.
Mastrelle, Philip, fate of, 179.
Mathison, W., 291.
Meols, 27.
Meols hall, notice of, 33.
Micro-fungi, the, popular nomenclature of, 127; other remarks on, *ib.*; their office in creation, 128; do they cause potato disease?, 129; new species recently discovered in Liverpool, 130.
Microscopic Fungi of the Liverpool District, 127, 293.
Mili and screw introduced in coining, 179.
Miller, Henry, 289.
Mint marks on coins, 188, 189.
Mints, various, 188, 189.
Miscellaneous Meeting, 299.
Moore, Rev. R. R., 295.
Moore, T. J., 293, 296, 297.
Mortimer, Mr., 18.
Morton, Mr. G. H., his Sections of the Cheshire shore, 49.
Moss, instances of its terminological connection with other words, 24; former extent of near Liverpool, 25.
Mosses, remarks on, 21; in South Lancashire, 25, 97; remarks on by Mr. Boult, 26, 27; eruption of, 108.

N

Natural History, Notabilia of, 229.
Negri Cristoforo, 285, 291.
Newton, hundred of, ancient forest in, 6.
New Zealand, subterranean forests of, 11.
Nimmo, Mr., on Leasowe shore, 37.
Norfolk and Norwich Archæological Society, 295.
Notabilia of the Archæology and Natural History of the Mersey District, during three years, 1863–4–5, Part I, 195, 297; Part II, 229, 297.
Notice of a recent disruption of soil by Rimrose Brook, 267, 295.
Numismatic History of England, from 1066 to the present time. Part II, 175, 296. (See Coins.)

O

Oak trees do not generally grow in bog, 22; this statement questioned, 97, 98, 99.
On an Extensive Collection of Birds, made during the Dutch Ladies' Expedition into Central Africa, 297.
On some of the processes in the Manufacture of Puddled Iron, 294.
On the Skull of a Whale and other Bones found at Leasowe, 297.
Original Letter, referring to the Pretender's March into England, in 1745, 271, 296.
Ormskirk, subterranean trees at, 11.
Ornaments found at Brough, 146.
Otterspool, coins found at, 197, 199.

P

Parkes, Lieut., his Survey of the Cheshire coast, 112.
Peat-moss, mode of formation of, 22.
" Petition crown," 185.
Pewter seals found at Brough, 147; found in the Bug, 149.
Phillipson, the brothers, account of, 162.
Pilling Moss, 96, *n.*
Plantation, artificial, remains of at Hoylake, 33.
Present state of the Science of Photography and its relations to Art, 290.
Primeval Antiquities of Furness and Cartmel, 295.
Puccinieæi, list of, 131, 135.

Q

Quaker's meeting-house at Colthouse, 168.
Quarter guineas coined, 190.

R

Race course at Leasowe, 60.
Rawlinson, family of, 170.
Rawlinson, Mr., on Leasowe shore, 43, 56.
Report of the Council, 283.
Rere cross, account of, 138.
Rollett, Mr., on the erosion of the Cheshire coast, 111.
Roman camp near Greta bridge noticed, 138.
Roman hoard found near Bury, Lancashire, 280.
Romans, the, at Warrington, 53.
Royal Asiatic Society, 291.
Royal Astronomical Society, 290.
Royal Cornwall Polytechnic Society, 290.
Royal Dublin Society, 296.
Royal Geographical Society, 288, 292.
Royal Geological Society of Ireland, 293.
Royal Institution of Cornwall, 292.
Royal Irish Academy, 292, 293, 294, 297.
Royal Society, 288, 293, 295, 298.
Royal Society of Edinburgh, 290.
Rundell, W. W., 294.

S

Sahara, proposed inundation of low lands of, by Sir Sydney Smith, 28.
Salinæ, Roman, 197.
Salt, on the manufacture of in early times, 201.
Salt pans, leaden, found at Northwich, 199.
Salt works, Roman, 197.
Sandhills in various parts of the world, notices of, 28; the place so called near Liverpool, 30.
Sands, of Lancashire and Cheshire, 27; of Egypt, 29; of Scotland, 30.

Sand storm, description of a, 31.
Sandys, Archbishop, account of, 167.
Sansom, T., 285, 292.
Satterthwaite, account of, 172; school, *ib.*
Sawrey, "This" and "The Other," noticed, 164; account of Sawrey school, 165.
Saxon Chronicle, 281.
Scotland, changes in the sea-coast of, 32.
Scotland, coins of, 179.
Sculthorpe, Rev. H. C., 299.
Seaforth, remains of subterranean forest at, 17; dangerous sands at, 269.
Seals, pewter, found at Brough, 147; found in the Bug, 149.
Seven shilling pieces, 190.
" Siege-pieces," 181.
Silver coinage, new, of William and Mary, cost of, 187.
Simon, his petition crown, 185.
Smith, Mr. C. Roach, on *Verteræ*, 143; on pewter seals, 148, 149, 150; mentioned, 287.
Smith, Mr. H. E., his section of Leasowe sea shore, 54, 204; author of papers &c., 137, 195, 229, 267, 286, 291, 293, 294, 295, 297, 298.
Smith, Mr. J. P. G., his section of the Cheshire sea coast described, 46; his description of, 99; thickness of strata, 119.
Smith, Sir Sydney, his proposal to inundate the low lands of the Sahara, 28.
Smithsonian Institution, 290.
" Sniggery," meaning of the term, 18.
Sniggery wood, account of, 33.
Société Archéologique de l'Orléanais, 295.
Société d'Emulation du Département de l'Allier, 291. (See Brough.)
Société d'Histoire et d'Archéologie de Genève, 298.
Société Impériale d'Emulation d'Abbeville, 289.
Society of Antiquaries, 286.
Society of Arts, 298.
SOME INTERESTING FEATURES OF A NEGLECTED ROMAN STATION, BROUGH-UNDER-STAINMOOR, 137, 291.
Somersetshire Archæological Society, 289.
Sovereigns, Australian, 194.
Spearhead found at Over Darwen, 275.
Sphœriacei, list of, 135.
Sphagnum, 22.
Stainmoor, desolate character of, 138.
Stargrass, compulsory plantation of, 29.
" Station, The," near Windermere, 164.
Statistical Society, 287, 293, 298.
Stevenson, Mr., on Leasowe shore, 19, 37, 41.
Stonehouse, J., 294.
Surrey Archæological Society, 294.
Sussex Archæological Society, 292.
Swift, Dean, on the Coinage, 188.
Sydney, N. S. W., sovereigns coined at, 194.

T

Teesdale's map of Lancashire, 74.
TELEGRAPH:—ON THE PRESENT EXTENT OF THE TELEGRAPH IN THE DIFFERENT COUNTRIES OF THE WORLD, 290.
Tinne, J. A., 288.
Tombstones on the Cheshire shore, 44, 108.
Towson, J. T., 289, 292, 297.
Traill, Dr., on the Cheshire sea shore, 117.
Trees, the various soils preferred by different, 102.
Tuberculariaceæ, list of, 134.

U

United States Secretary of the Treasury, 290.
" Unit," value of, 180.
Urns, burial, found at Over Darwen, 274; at Extwistle, 277; near Bury, Lancashire, 279.

V

Vancouver Exploration Committee, 294.
Verteræ, 137; 142.
Victoria, coins of, 192; Gothic crown of, *ib.*; Florin of, 193.
" Vigo" coin, 188.

W

Wallasey, formerly two churches at, 44; questioned, 94.
Warrington, Baines's description of, 98.
Waterhouse, N., 287, 291.
Weapons found at Brough, 147.
Weaver, the, Roman salt works near, 197.
Wells at Leasowe, notice of, 60.
Westminster, the dean of, 293.
Wilderspool, Roman remains at, 105.
Wilkinson, T. T., 290.
William and Mary, coins of, 187; new silver coinage of, *ib.*
William de Meles, seal of, found on the Cheshire shore, 55.
William IV, coins of, 192.
Winwick, Baines's description of, 98.
Wood, R. H., 289.
Wray Castle described, 158.
Wright, J. P., 291.

Y

Yorkshire, subterranean forests of, 10.
Young, Arthur, on a Lancashire road, 61 *n.*

FINIS.

T. BRAKELL, PRINTER, LIVERPOOL.

THE BOUND TO PLEASE
Heckman Bindery INC.